



MT. HOOD NATIONAL FOREST

FIRE MANAGEMENT PLAN

2012





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Reviewed and Updated by: _____ Date: _____

Table of Contents

CHAPTER 1. INTRODUCTION

CHAPTER 2. POLICY, LAND MANAGEMENT PLANNING, AND PARTNERSHIPS

- 2.1 National And Regional Fire Managemment Policy
- 2.2 Land And Resource Management Plans
- 2.3 Partnership

Chapter 3. FIRE MANAGEMENT UNIT DESCRIPTIONS

- 3.1. Fire Management Considerations Applicable To All Fire Management Units
 - 3.1.1. Land And Resource Management Plan Guidance
 - 3.1.2. Physical Characteristics that Apply to All Fire Management Units
- 3.2. Fire Management Considerations For Specific Fire Management units
 - 3.2.1. Clackamas River
 - 3.2.2. Eastside FMU
 - 3.2.3. Hood River FMU
 - 3.2.4. Highway 26 Corridor FMU
 - 3.2.5. Wilderness

Interagency Federal fire policy requires that every area with burnable vegetation must have a Fire Management Plan (FMP). This FMP provides information concerning the fire process for the Mt. Hood National Forest and compiles guidance from existing sources such as but not limited to, the Mt. Hood National Forest Land and Resource Management Plan (LMP), national policy, and national and regional directives.

The potential consequences to firefighter and public safety and welfare, natural and cultural resources, and values to be protected help determine the management response wildfire. Firefighter and public safety are the first consideration and are always the priority during every response to wildfire.

The following chapters discuss broad forest and specific Fire Management Unit (FMU) characteristics and guidance.

Chapter 1 introduces the area covered by the FMP, includes a map of the Mt. Hood National Forest, addresses the agencies involved, and states why the forest is developing the FMP.

Chapter 2 establishes the link between higher-level planning documents, legislation, and policies and the actions described in FMP.

Chapter 3 articulates specific goals, objectives, standards, guidelines, and/or desired future condition(s), as established in the forest's LMP, which apply to all the forest's FMUs and those that are unique to the forest's individual FMUs.

CHAPTER 1. INTRODUCTION

The Mt. Hood National Forest developed this FMP as a decision support tool to help fire personnel and decision makers determine the management response to an unplanned ignition. FMPs do not make decisions. Instead, they provide information, organized by FMUs, which provides a finer scale summarization of information than is possible at the forest level. These descriptions bring specific detail about the identifiable areas on the ground. FMPs are not static documents. They will evolve and be revised as conditions change on the ground and as modifications are made to the unit's LMP.

Area Description

The Forest lies directly east of the City of Portland and is divided into 4 Ranger Districts and two Fire Zones. The Forest is bounded on the north by the Columbia River Gorge National Scenic Area and the Columbia River, which also divides Oregon and Washington. Most of the Forest is located in Multnomah, Clackamas, Hood River, and Wasco counties. A small portion adjacent to the Willamette National Forest is in Marion and Jefferson counties. The Warm Springs Indian Reservation is located along the southeast border of the Forest. The lands of the Forest total a little more than one million acres, with the largest acreage on the west side of the Cascade Mountain Range.

The Portland Metropolitan Area with a population estimated at 1.9 million people, exerts the most significant social and economic influences on the Forest. Living only 50 miles from the Forest, most of Portland's residents can reach its more accessible areas in less than an hour's drive. In contrast to the urbanized counties on the west side of the Forest, Hood River and Wasco counties on the east are sparsely populated and rural.

The Pacific side of the Forest is virtually a different climatic and biological world compared to the east side. The climate of the west side's lower areas is mild and wet. Reflecting the climate, plant life is dominated by Douglas-fir trees in dense, cathedral-like stands of old growth, or in open stands carpeted with colorful flowers. The eastside is comparatively dry and temperatures are more extreme. Relatively open growths of ponderosa pine mixed with oak dominate the plant life in this harsher climate.

About one-third of the Forest's extensive stands of timber consist of very large trees two-hundred or more years old. In addition, the Forest contains other resources such as water, fish, wildlife, and opportunities for dispersed and developed recreation, and extraordinary scenery. These resources offer a wide range of opportunities and benefits to people of all walks of life.

Land Management Designations

Management prescriptions have been developed for 46 different "Management Areas" on the Forest. Each acre within the Forest boundary has been assigned one of these Management Area (MA) types. A given MA may be either a single parcel of land or a collection of parcels spread though out the Forest. For example, the "A2 Wilderness" Management Area is assigned to nine different wilderness areas, some of which are not continuous.

Management Areas are separated into five categories, i.e. A, B, C, D and e. Category "A" MAs have primary resource emphases other than timber production; regulated timber harvest is not allowed, but timber salvage may in some cases be considered. Category "B" MAs also have primary resource

emphases other than timber production, but regulated timber production is planned. The Category "C" MA (i.e. C1 timber Emphasis) has timber production as the primary emphasis and a variety of secondary other resource emphases. The "D-Series" Category represents MAs within the Bull Run Watershed Management Unit. Production of high quality water is the primary resource emphasis but a variety of other resource values are realized as well. Columbia Gorge National Scenic Area is represented by an "E-Series" of MAs and is not mentioned further in this plan.

Northwest Forest Plan Land Designations

Congressionally Reserved

This includes Wildernesses, Wild and Scenic Rivers, National Monuments, as well as other federal lands not administered by the Forest Service or BLM. Forest wide and Management Areas specific Standards and Guidelines apply.

Administratively Withdrawn

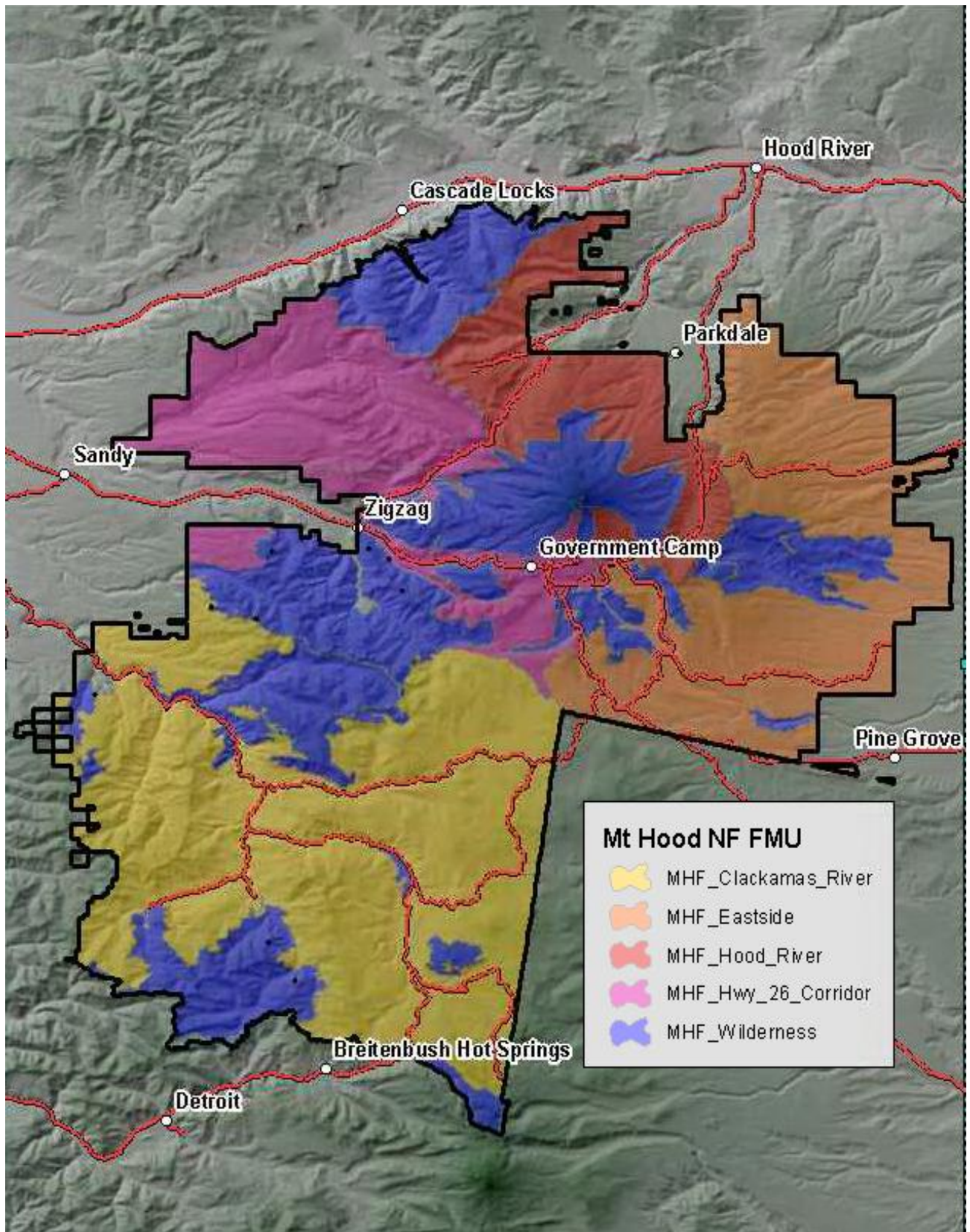
Administratively Withdrawn Areas are identified in current Forest Plan preferred alternatives and include recreation and visual areas, backcountry, and other areas where management emphasis precludes scheduled timber harvest. Forest wide and Management Areas specific Standards and Guidelines apply.

Late-Successional Reserves

Each Late-Successional Reserve will be included in fire management planning as part of watershed analysis. Fuels management in Late-Successional Reserves will utilize minimum impact suppression methods in accordance with guidelines for reducing risks of large-scale disturbances. Plans for wildfire suppression will emphasize maintaining late-successional habitat. During actual fire suppression activities, fire managers will consult with resource specialists (e.g., botanists, fisheries and wildlife biologists, hydrologist) familiar with the area, these standards and guidelines, and their objectives, to assure that habitat damage is minimized. Until a fire management plan is completed for Late-Successional Reserves, all wildfires will be suppressed to avoid loss of habitat in order to maintain future management options.

Matrix Land

For areas in the matrix that are located in the rural interface, planning of fire management activities should be coordinated with local governments, agencies, and landowners during watershed analysis to identify additional factors which may affect hazard reduction goals. Hazard reduction may become more important in the rural interface and areas adjacent to structures, dwellings or other amenities. Fire suppression actions in matrix will have no additional standards and guidelines.



Chapter 2. POLICY, LAND MANAGEMENT PLANNING, AND PARTNERSHIPS

Forest Service Manual 5101 defines the Authorities under which the Forest Service Fire Management organization operates. Fire management includes all activities undertaken for the following purposes:

1. Firefighter safety, public safety, and community protection.
2. The protection of resources and other values from wildfire.
3. The use of prescribed and wildland fire to meet land and resource management goals and objectives.

As stated in FSM 5102, objectives of Forest Service Fire Management activities are:

1. Forest Service fire management activities shall always put human life as the single, overriding priority.

Forest Service fire management activities should result in safe, cost-effective fire management programs that protect, maintain, and enhance National Forest System lands, adjacent lands, and lands protected by the Forest Service under cooperative agreement.

The regulations and policy in the following documents guide the fire management as outlined in this FMP.

2.1. National and Regional Fire Management Policy

Forest Service policy and direction that are relevant to this plan include:

- 1995 Federal Wildland Fire Management Policy and Program Review (January 2001)
- National Fire Plan
- Forest Service Manual 5100
- Forest Service handbook 5109
- Guidance for Implementation of Federal Wildland Fire Management Policy. (February 13, 2009)

2.2. Mt. Hood National Forest Land and Resource Management Plan

- *Mt. Hood* National Forest Land and Resource Management Plan and Record of Decision October 1990
- **Record Of Decision** for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl April 1994

2.3. Partnership

Collaboration with Regional, State, local stakeholders, tribes and the public occurs on several levels consistent with the Framework for Collaboration (10-Year Comprehensive Strategy, August 2001). Extensive coordination and public involvement was accomplished in development of the forestland and resource management plan. This fire management plan has been developed through coordination with adjacent State, tribal and rural cooperators. Key collaborators include Oregon Department of Forestry,

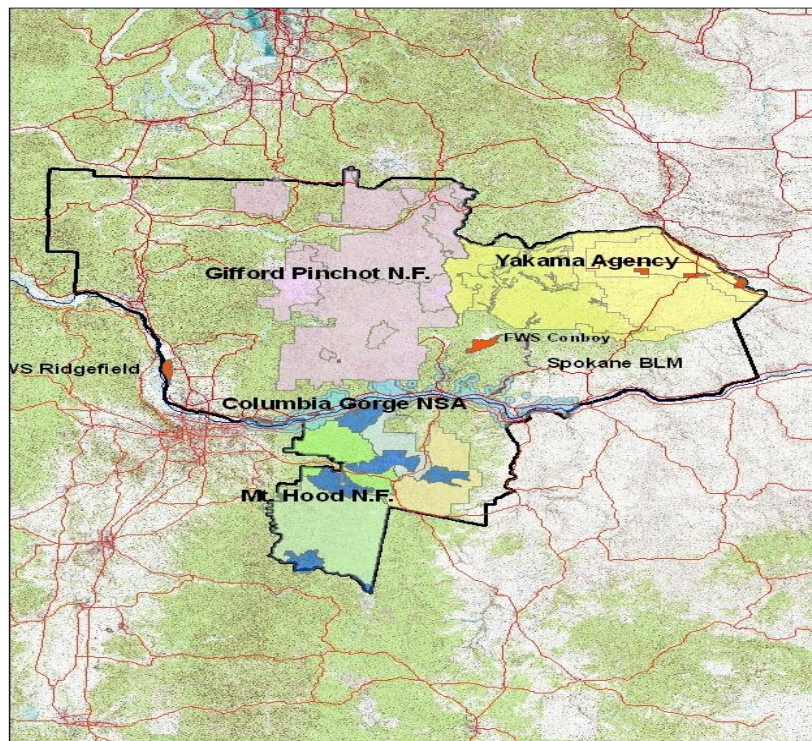
Confederated Tribes of Warm Springs Reservation, the counties of Clackamas, Hood River, and Wasco, and the city of Portland.

Central Cascades Fire Planning Unit

This Fire Planning Unit (FPU) is identified as the Central Cascades Fire Planning Unit (NW_WA_007), and will function as the geographic fire-planning component of the Federal Fire Program Analysis – Preparedness Module (PM) planning process.

The Central Cascades FPU (CC-FPU) will serve to facilitate the landscape-scale development of the FPA Planning System and is purposefully designed as an interagency planning unit, consisting of the following federal agencies:

- DOI Fish & Wildlife Service Region 1
- DOI Bureau of Indian Affairs – Yakama Agency
- DOI Bureau of Land Management – Spokane District
- USDA Forest Service
 - Columbia Gorge National Scenic Area
 - Gifford Pinchot National Forest
 - Mt. Hood National Forest



Chapter 3. FIRE MANAGEMENT UNIT DESCRIPTIONS

The primary purpose of developing FMUs in fire management planning is to assist in organizing information in complex landscapes. FMUs divide the landscape into smaller geographic areas to easily describe safety considerations, physical, biological, social characteristics and to frame associated planning guidance based on these characteristics.

The following information, including the summaries of fuels conditions, weather and burning patterns, and other conditions in specific FMUs, helps determine the management response to an unplanned ignition and provides a quick reference to the strategic goals in the forest's LMP.

3.1. Fire Management Considerations Applicable to All Forest Fire Management Units

The Fire Management program on the Mt. Hood National Forest includes all activities for the protection of resource and other values from wildfire. In addition, the program provides the leadership in the planning and execution of the use of prescribed fire to meet land and resources management goals and objectives. The role of fire Management is to coordinate, plan and implement the fire protection and use programs consistent with national policy, the standards and guidelines and management prescriptions.

3.1.1. Mt. Hood National Forest Land and Resource Management Plan Guidance

- **Goals**
 - Provide fire protection, fuels treatment and pest management programs that are responsive to land and resource management goals and objectives (page Four-1).
- **Forest Wide Standards & Guidelines**
 - Key direction from the MHF LRMP directing Fire Management Activities (pages Four-76 – Four-78, Four-51-Four-52):
 - All fire management activities shall comply with Management Area management direction. [Forest Wide Standard \(FW\)-248](#)
 - Fire management planning should minimize “cost plus net value change”, i.e. costs and changes to inherent resource values of the activity area should be minimized. [FW-249](#)
 - All wildland fires shall receive an “appropriate suppression response” (Regional Guide for Pacific Northwest Region, 1984). [FW-256](#)
 - Dead, down woody material loading levels shall be managed to provide for multiple resource objectives (Regional Guide for Pacific Northwest Region, 1984). An economic analysis shall identify resource benefits and costs to determine appropriate funding. [FW-265](#), [FW-266](#)
 - The role and potential of fire as an integral part of the forest and rangeland environment shall be considered in obtaining multiple-use forest management objectives. [FW-048](#)

- Prescribed burning should be considered for use in meeting management objectives in areas where ecological studies show that natural fire has played a significant role in ecosystem development (Regional Guide for Pacific Northwest Region, 1984). [FW-049](#)
- Prescribed burning may be used when analysis indicates that it will be effective and feasible. Analysis shall include consideration of measures to mitigate impacts on air quality. [FW-050](#), [FW-051](#)

3.1.2. Physical Characteristics that Apply to All Fire Management Units

Two weather patterns have the greatest effect on fire behavior or resistance to control on the forest, the thermal trough and marine push. These patterns may occur independently of one another or in succession as the thermal trough passes to the east of the Cascades a marine push may move in behind the trough. The effects of which are different on each side of the Cascades.

The thermal trough creates what are regionally referred to as east wind events. The thermal trough will build along the coast creating an area of low pressure. As a result, winds originating in Eastern Oregon will develop as east winds bringing warm dry air to the west side of the Cascades. This wind will increase in speed through saddles and gaps and accelerate downhill as well; though some areas may be sheltered from the east wind. However, all areas west of the Cascades will experience very low minimum RH with little recovery overnight. This enables wind driven spread in areas directly impinged by east winds, terrain driven spread in areas sheltered from the wind, and active burning through the night. Thermal troughs associated with high Haines days or atmospheric instability create a very high potential for large fire growth near the crest. September and October are months during the fire season this most frequently occurs.

A marine push may occur as the thermal trough moves off to the east, but a marine push may also occur independently of the thermal trough. The moderate/strong marine push brings moist air to the west side of the Cascades but also creates a west winds and instability on the east side of the Cascades. A Foehn effect may also occur as the Cascades form a barrier to moisture moving westward and causing warm dry air to rush down the east slope of the Cascades.

When a thermal trough is forecasted for the area, expect strong easterly winds, very low minimum RH, and little recovery and active fire spread through the night. This pattern may persist for several days. When a moderate or strong marine push is forecasted, the east slope of the Cascades should expect gusty westerly winds, instability with development of thunderstorms, and warm, dry, and gusty downhill winds from the crest of the Cascades. In both cases, expect the potential for wind that accelerates through the gaps and gorge.

3.2. Fire Management Considerations for Specific Fire Management Units

Mt. Hood Fire Management Units

- 3.2.1. Clackamas River FMU
- 3.2.2. Eastside FMU
- 3.2.3. Hood River FMU
- 3.2.4. Hwy. 26 Corridor FMU
- 3.2.5. Wilderness

3.2.1 Clackamas River

3.2.1.1 FMU Snapshot:

Fire Behavior Indicator: ERC

90 th percentile	46
97 th percentile	55

NFDRS Weather Station:

Redbox – 350718

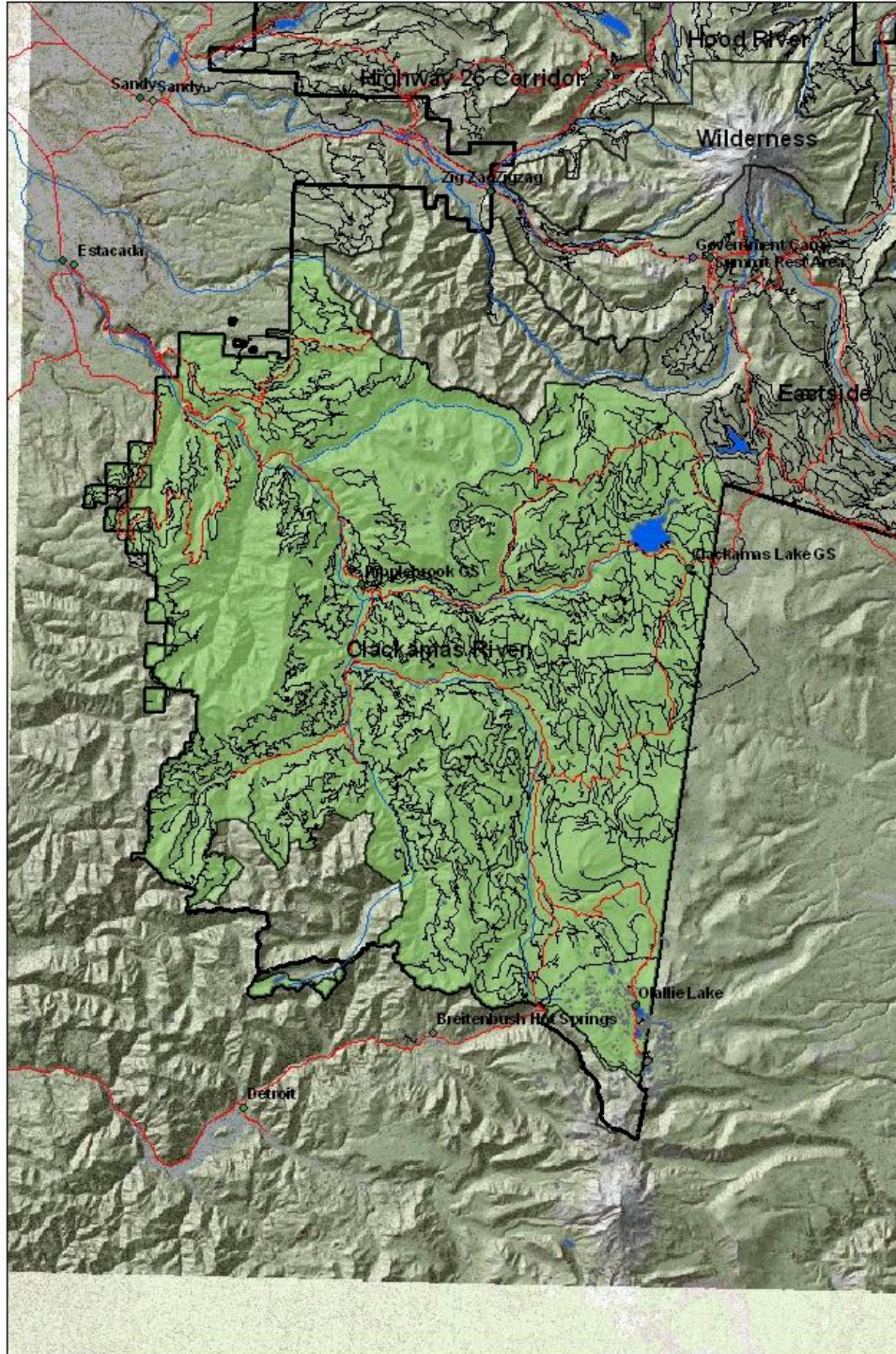
Wanderer's Peak – 350726

Acres/Agency: 497,845

- **Predominant Vegetation Types:** The Warm Moist Western Hemlock and Pacific Silver Fir plant association groups dominate the drainages and lower slopes of the western portion of the FMU. These groups generally lack the fine fuel loadings found in other groups. They are characterized by deep duff and heavy loading of large logs. The resulting wildland fire hazard is usually low to moderate, depending on weather conditions in a given year. Most years the associations in this group are well saturated and slow to dry. Once the duff dries, however, it will carry fire. Prolonged smoldering in deep duff and punky logs is common. In these stands mixed severity to stand replacing fires will dominate during large fires. Along the Crest and the high ridges stands are dominated by lodge pole pine with various other species present. Crowns often reach to the ground increasing crown fire potential. These stands are reaching maturity and are starting to deteriorate. Insect attacks have also caused mortality on a landscape scale in these stands. Relatively sparse fine fuels and moderate to heavy loadings of large diameter woody fuels are common. Most of the logs are rotten. Insect killed and damaged trees contribute to the fuel loading both on the ground and for crown fires. Duff depths are generally light.

IA Dispatch Office: Columbia Cascade Communication Center

LMP Options available for response to ignition: The preferred fire suppression strategies and tactics are those that provide primarily for firefighter and public safety and secondly will be the most cost-effective commensurate with the objectives for the Fire Management Unit (FMU) and/or Land Management Area within which the fire occurs. Initial action on all wildfires will be to suppress the fire at the lowest cost with the fewest negative consequences with respect to firefighter and public safety.



Clackamas River Fire Management Unit

3.2.1.2 FMU Guidance

Standards & Guidelines

A3 RESEARCH NATURAL AREA

Preference shall be given to those suppression methods and strategies resulting in the least practicable area burned, commensurate with cost-effectiveness, and having the least effect on the studies and values in the Research Natural Area.

A3-043

Human-caused wildfires shall be suppressed. Application of fire retardant or use of tractors should not occur during fire suppression actions.

A3-044, A3-045

A9 KEY SITE RIPARIAN AREA

Heavy equipment (e.g. tractors) should not be used for fire suppression.

A9-041

Application of chemical fire retardants should be minimized.

A9-042

B1 WILD, SCENIC AND RECREATIONAL RIVERS

Off-road vehicle travel within the designated river corridors shall not be permitted except for emergency fire suppression purposes.

B1-086

Use of tractors to construct firelines may be permitted only in emergency fire suppression situations. Fireline locations shall consider protection of river related resource values.

B1-087, B1-088

Fire retardant “drops” should be directed to minimize entry of chemicals into watercourses and to protect river values.

B7 GENERAL RIPARIAN AREA

Tractor firelines should not be constructed. Perpendicular crossing may be permitted with subsequent rehabilitation.

B7-065, B7-066

B8 Earthflow

Tractor firelines should not be constructed across the toe or scarp of high or moderate risk earth flows.

B8-052

3.2.1.3 FMU Characteristics

3.2.1.3.1 Safety

- Two power line corridors
- Insect damaged timber stands
- Steep terrain
- Steep narrow roads, heavy recreation traffic

3.2.1.3.2 Physical

The Clackamas River Fire Management Unit (FMU) is part of the Willamette basin which lies within the Willamette province. The FMU is covered under five separate watershed analysis. These are the **Lower Clackamas River, Fish Creek, Oak Grove Fork, Collawash** and **Upper Clackamas River**. The Northwest Forest Plan designates a portion of the watershed as a Tier1 Watershed. Tier 1 Watersheds were selected for directly contributing to anadromous salmonid and bull trout conservation. A complete guide to Key Watersheds is located in the ROD for the Northwest Forest Plan beginning on page B-18. The Clackamas River is designated as a Scenic and Recreational River under the National Wild and Scenic River Act. It is also designated as a State Scenic Waterway. The FMU lies from the Cascades crest west and covers approximately 497,845 acres. The FMU is adjacent to three class one air sheds (Bull of the Woods Wilderness, Mt. Jefferson Wilderness and Salmon-Huckleberry Wilderness). The FMU shares a boundary on the east with lands of the Confederated Tribes of the Warm Springs, on the west by state, private and Bureau of Land Management lands. To the south is the Willamette National Forest and to the north are the Wilderness and highway 26 Corridor FMU's. Primary road access into and through the FMU is Oregon State Highway 224, and Forest Service roads 46, 42, 57, and 63.

Precipitation ranges from 100 inches in the west to 51 inches on the crest.

Elevation ranges from 700 feet in the west to 6000 feet near Olallie Lake in the east.

Plant Association Groups include Western Hemlock, Eastside Douglas Fir, and Pacific Silver Fir

3.2.1.3.3 Biological

This FMU is dominated by long interval Fire Regimes. Most common is Regime VA, the 200-400 year Stand-replacement regime. This fire regime includes all of the associations in the western hemlock, silver fir, and mountain hemlock series. The presence of this type of vegetation in the upper portion of watersheds corresponds with the maritime climate. Yearly precipitation is particularly high, 54-120 inches, as compared to other FMU's.

Historic fire intervals, in this fire regime, exceed 200+ years. Current conditions of the all regimes in this FMU do not differ much from historic regimes. All stands are currently mapped as Condition Class 1. Fire suppression had reduced the extent of fires that have occurred within the wet forest communities.

3.2.1.3.4 Resources

The Clackamas River FMU has numerous areas of high public use that may be difficult to evacuate. Trigger points for evacuation will be identified early in the incident. Private property, Willamette NF, BLM, and Warm Springs Reservation border the FMU. Several hydropower sites exist within the FMU along with transmission lines. Several designated Wilderness Areas are contained or partially contained within the FMU. Below are tables containing lists of these values and the consequence rating if they are destroyed.

Value: Portland General Electric (PGE) Inholdings	Consequence: High
High Tension Power Lines	
Lake Harriet Dam	
Timothy Lake Dam	
Three Lynx	
Narrative: PGE power generating and transmission facilities. Fire in proximity to these facilities has the potential to affect power supply to the Portland Metro area.	

Value: Forest Boundaries	Consequence: High
Private Property	
Salem Bureau of Land Management (ODF Protection)	
Warm Springs Indian Reservation	
Willamette National Forest	
Narrative: Increased complexity due to multiple jurisdictions and potential evacuation. Potential exists for the loss of personal and public property.	

Value: Campgrounds, Horse Camps and recreation sites	Consequence: High
Bagby Hot Springs	
Breitenbush Lake Campground	
Clackamas Lake Campground	
Camp Ten Campground	
Fan Creek Campground	
Frazier Fork Campground	
Frazier Turnaround Campground	
Gone Creek Campground	
Hideaway Lake Campground	
High Rock Spring	
Hood View Campground	
Horseshoe Lake Campground	
Indian Henry Campground	
Joe Graham Horse Camp	
Kingfisher Campground	
Lake Harriet Campground	
Little Crater Lake Campground	
Little Fan Creek Campground	
Lower Lake Campground	
Meditation Point Campground	
North Arm Campground	
Oak Fork Campground	
Olallie Lake Campground	
Paul Dennis Campground	
Peninsula Campground	
Pine Point Campground	
Raab Campground	
Rainbow Campground	
Ripplebrook Campground	
Riverside Campground	
Riverford Campground	
Shellrock Creek Campground	
Summit Lake Campground	
Triangle Lake Equestrian Camp	
Narrative: High values of risk due to infrastructure, public use and potential for difficult evacuation. Infrastructure will consist of some wood constructed buildings, toilets, covered picnic areas, signs and bulletin boards, and parking areas. Public use in these areas can be extremely heavy between July through October.	

Value: Forest Service Facilities	Consequence: High
Clackamas Lake Guard Station	
Lazy Bend Work Center	
Oak Grove Guard Station	
Olallie Guard Station	
Ripplebrook Fire Station	
Ripplebrook Guard Station	
Ripplebrook Helibase	
Ripplebrook Housing Compound	
Narrative: The majority of these facilities are historic in nature. Remote locations, public safety and high replacement costs place these values at high risk.	

Value: Lookout Tower with Radio Repeaters	Consequence: High
Clear Lake	
Sisi	
Narrative: Lookout Towers have high historic and fire detection value. Critical for forest-wide communication. High replacement costs.	

Value: Radio Repeaters	Consequence: High
Bagby	
Mt. Lowe	
Tumala	
Whalehead	
Narrative: Critical for forest-wide communication. High replacement costs.	

Value: Recreation Areas (Non-Campground)	Consequence: High
La Dee Flats ATV Area	
Pacific Crest Trail (PCT)	
Narrative: Non-Developed Recreation Areas with potential for high public use, difficult evacuation, possibility of costly, timely trail clearance patrols. PCT is a National Scenic Trail.	

Value: Remote Automatic Weather Stations (RAWS)	Consequence: High
Red Box	
Wanderer's Peak	
Narrative: RAWS sites have high replacement cost and there is the potential for lost historic weather data capabilities.	

Value: Timber Lake Civilian Conservation Center	Consequence: High
Narrative: High value training and residential living facilities located in a remote location. Poor egress, high cost of replacement and high risk to life safety.	

Value: Wilderness Boundaries	Consequence: Moderate
Bull of the Woods Wilderness Area	
Mt. Jefferson Wilderness Area	
Roaring River Wilderness Area	
Salmon-Huckleberry Wilderness Area	
Sisi Wilderness Area	
Narrative: Fire trespassing onto designated wilderness areas will have minimal impact to infrastructure and public safety.	

Value: Campgrounds and Picnic Areas with moderate consequence	Consequence: Moderate
Armstrong	Campground
Carter Bridge	Campground
Lazy Bend	Picnic Area
Sunstrip	Campground
Narrative: Moderate risk due to limited infrastructure and easy egress/ingress. All sites are located on the Highway 224 corridor which provides for rapid emergency response and unrestricted two way traffic.	

3.2.1.4 FMU Fire Environment

3.2.1.4.1 Fire Behavior

Under current stand conditions stand replacing and mixed severity fires will dominate during large fires. Most of the active burning occurs during one burning period. Low rates of spread and fireline intensities dominate, although prolonged smoldering can create a high severity burn. High intensity fires depend on extreme winds, prolonged drought, or both. The highest fire danger occurs from mid-September through October. During this period, the number of fires that occur has decreased but the number of acres lost has increased.

Deep drainages and high ridges dominate the FMU. These drainages provide a channel for both east and west wind to funnel through increasing in intensity. The diurnal effects created by long drainages and steep ridges are most pronounced. Even under calm conditions, daily heating can cause strong wind to occur in these drainages. Under the right conditions, this can have a significant effect on fire spread and intensity.

Along the Cascade crest in the eastern portion of the FMU, dead and dying lodge pole pine and other species create a control problem under severe circumstances. These stands are very layered and moss draped. Although in most cases ground fuels are light, under drought conditions these stands are very susceptible to fire. This area has very limited road access. This is especially true around the Olallie Lake area. Fuel conditions in the FMU vary between the western valleys to the sub alpine areas of the Cascade crest and higher ridges.

The Warm Moist Western Hemlock and Pacific Silver Fir plant association groups dominate the drainages and lower slopes of the western portion of the FMU. These groups generally lack the fine fuel loadings found in other groups. They are characterized by deep duff and heavy loading of large logs. The resulting wildland fire hazard is usually low to moderate, depending on weather conditions in a given year. Most years the associations in this group are well saturated and slow to dry. Once the duff dries, however, it will carry fire. Prolonged smoldering in deep duff and punky logs is common. In these stands, mixed severity to stand replacing fires will dominate during large fires.

Along the Crest and the high ridges, stands are dominated by lodge pole pine with various other species present. Crowns often reach to the ground increasing crown fire potential. These stands are reaching maturity and are starting to deteriorate. Insect attacks have also caused mortality on a landscape scale in these stands. Relatively sparse fine fuels and moderate to heavy loadings of large diameter woody fuels are common. Most of the logs are rotten. Insect killed and damaged trees contribute to the fuel loading both on the ground and for crown fires. Duff depths are generally light.

3.2.1.4.2 Weather

The thermal trough creates what are regionally referred to as east wind events. The thermal trough will build along the coast creating an area of low pressure. As a result, winds originating in Eastern Oregon will develop as east winds bringing warm dry air to the west side of the Cascades. This wind will increase in speed through saddles and gaps and accelerate downhill as well; though some areas may be sheltered from the east wind. However, all areas west of the Cascades will experience very low minimum RH with little recovery overnight. This enables wind driven spread in areas directly impinged by east winds, terrain driven spread in areas sheltered from the wind, and active burning through the night. Thermal troughs associated with high Haines days or atmospheric instability create a very high potential for large fire growth near the crest. September and October are months during the fire season this most frequently occurs.

This FMU has two Remote Automated Weather Stations (RAWS). They are Wanderers Peak and Red Box. Wanderers Peak is located at the west end of the FMU at an elevation of 4350 feet. It is positioned on the upper 1/3 of the slope on a south aspect. The surrounding fuel model is a fuel model G. This Station has been the subject of repeated vandalism. In June of 2001, it was destroyed by vandals. It was September of 2003 before the Forest was able to restore a working station to the site. And even though the access road has been obliterated and only necessary components remain above ground, this site still appears to be a target of these hooligans.

Red Box is located at the east end of the FMU at an elevation of 3250 feet. It is positioned mid slope on a southwest aspect. The surrounding fuel model is a fuel model G.

ERC values. Weather data 1980-2009.

Station	Redbox	Wanderers Peak
Model	7G3PE3	7G3PE3
Index	ERC	ERC
90th	45	46
97th	52	55

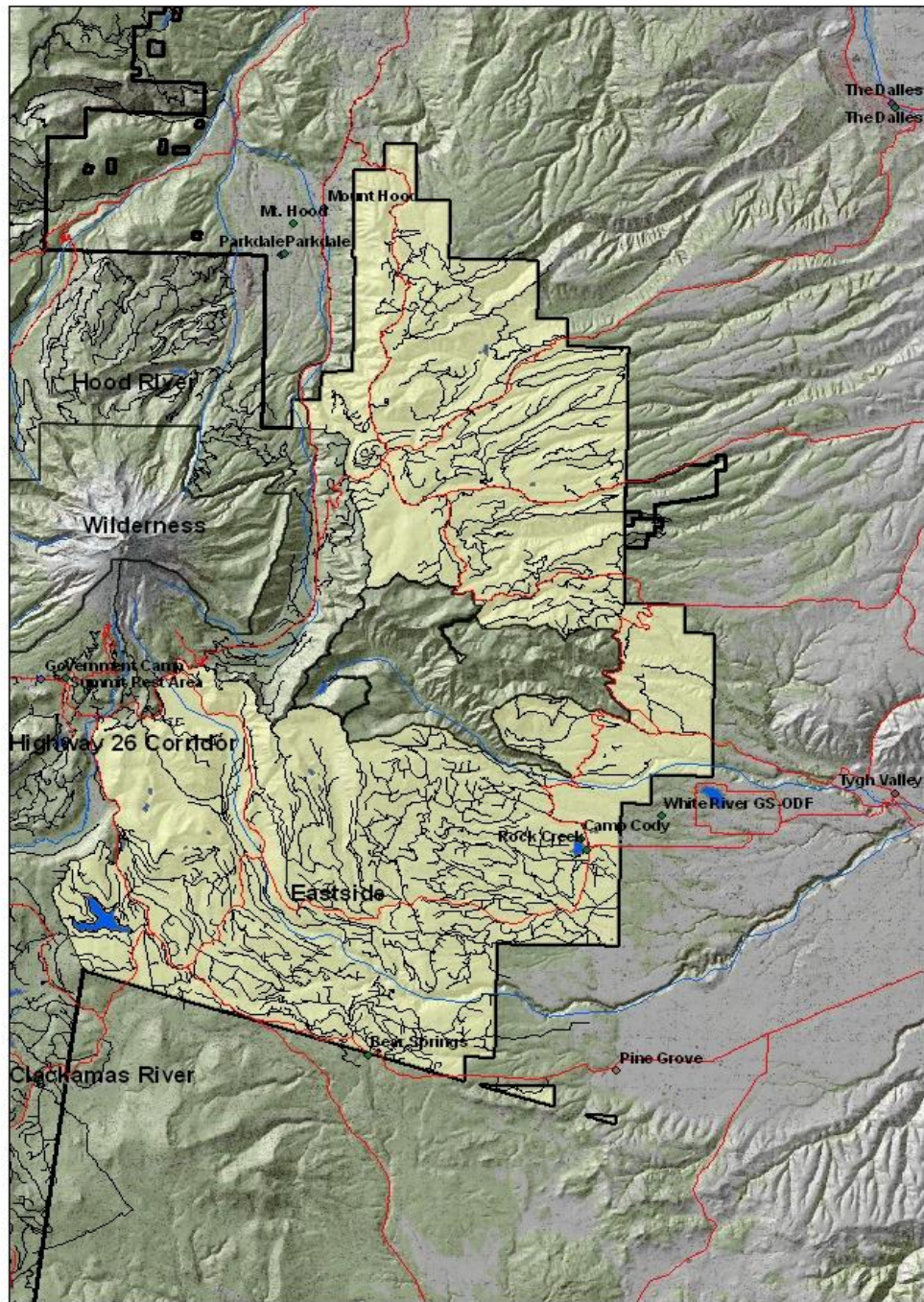
3.2.2. Eastside

3.2.2.1 FMU Snapshot

- Fire Behavior Indicator: ERC
- NFDRS Weather Station:
 - Pollywog – 350912
 - Wamic Mill - 350913
- Acres/Agency: 227,586

Predominant Vegetation Types: Moist-site and dry grand fir zone forests dominate the western, upper elevation portions of this area in various stages of succession. Much of the upper area has been harvested, by both shelter wood and clear cutting. These areas have early seral stands dominated by Douglas fir, with lesser amounts of ponderosa pine, grand fir, and lodge pole pine. Multi-story mid and late seral stands of Ponderosa pine and Douglas fir, with an under story of shade-tolerant grand fir, dominate the balance of these landscape units. Western larch, lodge pole pine and western white pine may also be present. The structure and composition of these stands is strongly influenced by fire exclusion, which results in denser, smaller diameter stands and a greater preponderance of grand fir than would have been the case under a natural fire regime.

- IA Dispatch Office: Columbia Cascade Communication Center
- LMP Options available for response to ignition: The preferred fire suppression strategies and tactics are those that provide primarily for firefighter and public safety and secondly will be the most cost-effective commensurate with the objectives for the Fire Management Unit (FMU) and/or Land Management Area within which the fire occurs. Initial action on all wildfires will be to suppress the fire at the lowest cost with the fewest negative consequences with respect to firefighter and public safety.



East Fire Management Unit

3.2.2.2 FMU Guidance

- **Standards & Guidelines**

A2 WILDERNESS

Preference shall be given to those suppression methods and strategies resulting in the least practicable area burned, commensurate with cost-effectiveness, and having the least effect on wilderness values.

A2-107

Human-caused wildfires shall be suppressed.

A2-108

A9 KEY SITE RIPARIAN AREA

Heavy equipment (e.g. tractors) should not be used for fire suppression.

A9-041

Application of chemical fire retardants should be minimized.

A9-042

B1 WILD, SCENIC AND RECREATIONAL RIVERS

Off-road vehicle travel within the designated river corridors shall not be permitted except for emergency fire suppression purposes.

B1-086

Use of tractors to construct firelines may be permitted only in emergency fire suppression situations. Fireline locations shall consider protection of river related resource values.

B1-087, B1-088

Fire retardant “drops” should be directed to minimize entry of chemicals into water courses and to protect river values.

B7 GENERAL RIPARIAN AREA

Tractor firelines should not be constructed. Perpendicular crossing may be permitted with subsequent rehabilitation.

B7-065, B7-066

- **Mill Creek Watershed:** As stated in the Northwest Forest Plan and the Mt. Hood Forest Plan, retardant drops should be directed to minimize entry of chemicals into streams, lakes, watercourses, or other water bodies. As soon as possible, switch to using helitankers and buckets near water bodies. Helitankers and helicopters with buckets can make more precise drops than air tankers, lowering the probability of accidental drops into streams and wet areas (**Mill Creek Watershed Analysis**). For further guidance, refer to the Nationwide Aerial Application of Fire Retardant on National Forest System Land ROD December 2011.

- Surveyors Ridge LSR

3.2.2.3 FMU Characteristics

3.2.2.3.1 Safety

FMU Safety Considerations

- BPA powerline corridors
- Insect damaged timber stands
- Areas of heavy fuel, especially in the fire regime III, VI, V areas – many have not had a fire return interval recently (within the past 100 years)
- Narrow roads, recreation traffic, especially on holiday weekends
- Aviation training routes, primary one is along the east boundary of the FMU/FS lands.
- Some mineshafts/ claims do exist in some drainages, but none are known to be currently active.
- ATV use at McCubbins Gulch OHV – Various trails crossing main roads
- Many dispersed campsites throughout the FMU.

3.2.2.3.2 Physical

The Eastside FMU lies in the Deschutes River Province. The FMU is covered under the **White River Watershed Analysis** on the south end and the **Mill Creek** and **Miles Creeks** Watershed Analysis on the north end. White River originates on the south flank of Mt. Hood in the White River Glacier and flows into the Deschutes River just above Sherar's Falls. White River is the northernmost large tributary of the Deschutes River. The FMU lies wholly east of the Cascades crest, and covers approximately 227,586 acres. The primary road accesses into and through the FMU are Oregon State Highways 35 and 216, US Highway 26 and 197, and Forest Roads 44, 48, 43, and 27.

3.2.2.3.3 Biological

- Plant Association Groups range from Pacific Silver Fir at the crest to Very Dry Ponderosa pine and White oak in the east.
- Various plant species, many associated with areas that have water; check with local botany specialists
- Northern Spotted Owl habitat in higher elevation mature stands, as well as nesting, roosting, and foraging habitat near many riparian zones

- Anadromous fisheries for Salmonids in the Mill Creek, Five Mile Creek, Eight Mile Creek, Ramsey Creek, Fifteen Mile Creek drainages. Native fish species in the other water drainages south of the 2730 road system, but no anadromous fisheries. Follow forest standards and guides for use of retardant near water.
- Big game winter areas near Rock Creek, and East of the Badger Wilderness (Tygh Creek and Badger Creek drainages).
- Bald Eagles, Goshawks, and various other raptors nest or use areas of the FMU for nesting and foraging. Bonney Butte has an annual raptor catch and release program

3.2.2.3.4 Resources

The Eastside FMU has numerous areas of high public use that may be difficult to evacuate. Trigger points for evacuation will be identified early in the incident. Private property, State lands, BLM, and Warm Springs Reservation border the FMU. The Dalles Municipal Watershed is within the FMU. Several designated Wilderness Areas are contained, partially contained or border the FMU. Below are tables containing lists of these values and the consequence rating if they are destroyed.

Value: Private in-holdings	Consequence: High
Camp Baldwin	Boy Scout Camp within the boundary of FS
Sportsman's Park	Community within the boundary of FS
Narrative: High values of risk are due to infrastructure, public use, private property and potential evacuations. Evacuations could be time consuming depending on the number of users at any given time of the year. Infrastructure consists of homes, numerous wood structured buildings, and utilities. Camp Baldwin is a Boy Scout camp that sits within the boundary of the Forest Service. It has several buildings within the site and used throughout the year. Sportsman's Park has residents throughout the year. The heaviest use for both sites is typically during the months of May – October.	

Value: Municipal Watershed	Consequence: High
The Dalles Municipal Watershed	Watershed for the City of The Dalles
Narrative: The Dalles Municipal Watershed (Mill Creek watershed) supplies the water for the City of The Dalles, population of approximately 6,000. The access is limited to The City of The Dalles employees, Forest Service employees, and Law Enforcement due the fact that all of the roads going into the watershed are gated and locked. The land is managed by a variety of federal agencies, state, and private citizens. Only 38% of the designated Municipal watershed is on Federal land managed by the Forest. The Forest Service areas encompass the headwaters of both the North and South Forks of Mill Creek	

Value: Forest Boundary	Consequence: High
Forest Service boundary with private property, Oregon Department of Forestry, BLM, ODF&W, and BIA.	Boundary
Narrative: Public Safety. There will be increased complexity due to multiple jurisdictions from state and federal agencies. There could be a potential for public evacuations. There is a potential for loss of personal property, property values and possible displacement of property owners for an extended period of time.	

Value: Campgrounds and Guard Stations	Consequence: High
Rock Creek Campground	Campground/Reservoir
Camp Cody	Campground/FS Helispot
Bear Springs Guard Station	FS Guard Station/work center
Spring Drive	Campground
Narrative: Public Safety. All are high values of risk due to infrastructure, public and Forest Service use and potential evacuations. Infrastructure consists of homes, numerous wood structured buildings, and picnic areas. During the months of May – October is typically the highest use for the area.	

Value: Lookouts	Consequence: High
Flagpoint Lookout	Lookout/Repeater Site
5 Mile Lookout	Historical Lookout/Recreation Rental
Narrative: High values of risk are due to infrastructure, public and Forest Service use, historical value, and potential evacuations. Infrastructure consists of wood structured buildings and repeater towers.	

Value: Campgrounds	Consequence: Moderate
Badger Lake	Campground
Bear Springs	Campground
Bonney Crossing	Campground
Bonney Meadow	Campground
Camp Windy	Campground
Clear Creek	Campground
Eight Mile	Campground
Fifteen Mile	Campground
Forest Creek	Campground
Keeps Mill	Campground
Knebal Springs	Campground
Little Badger	Campground
Lower Eight Mile Crossing	Campground
McCubbins Gulch/Overflow	Campground
Pebble Ford	Campground
Post Camp	Campground
White River Station	Campground
Narrative: Public Safety. All are moderate due to limited infrastructure. Infrastructure consists of CXT toilets, paved or unpaved parking, picnic tables and Forest Service signs or bulletin boards. The above campgrounds are all under a concessionaire contract. Public use varies depending on time of year; typically the heaviest use is during May – October.	

Value: Trailheads	Consequence: Low
Badger Creek	Trailhead
Badger Lake Road 4860-140	Trailhead
Bottle Prairie	Trailhead
Boulder Lake Rd 4880	Trailhead
Fifteen Mile	Trailhead
Gumjuwac East	Trailhead
Surveyors Ridge South	Trailhead
Narrative: The sites are listed as low, due to limited or nonexistent infrastructure. Forest Service signs or bulletin boards may exist but are limited. Public use varies, but the highest use would be during May – October.	

3.2.2.4 FMU Fire Environment

Plant Association Groups range from Pacific Silver Fir at the crest to Very Dry ponderosa pine White oak in the east.

Fire regime alteration

All Fire Regimes that occur on the Mt. Hood National Forest are represented in this FMU. The eastern half of the FMU is predominantly made up of fire regimes I and IIIA. These are the short interval regimes. Fire Regime I is characterized by a fire interval of 0-35 years and low severity fires. Regime IIIA has a fire interval of <50 years and fires are a mixed severity.

The remainder of the FMU is made up of the longer interval mixed severity and stand replacement fire regimes.

3.2.2.4.1 Fire Behavior

Fuel Conditions in the FMU likely to influence fire behavior

Moist-site and dry grand fir zone forests dominate the western, upper elevation portions of this area in various stages of succession. Much of the upper area has been harvested, by both shelter wood and clear cutting. These areas have early seral stands dominated by Douglas fir, with lesser amounts of ponderosa pine, grand fir, and lodge pole pine. Multi-story mid and late seral stands of ponderosa pine and Douglas fir, with an under story of shade-tolerant grand fir, dominate the balance of these landscape units. Western larch, lodge pole pine and western white pine may also be present. The structure and composition of these stands is strongly influenced by fire exclusion, which results in denser, smaller diameter stands and a greater preponderance of grand fir than would have been the case under a natural fire regime.

Wildland fire risk and hazard have specific meanings in fire management. Risk refers to the probability of fire starts. Hazard refers to the available fuel loading. Areas of high fuel hazard within the Eastside FMU include:

- Mixed conifer stands on Frog Lake Buttes: spruce budworm related mortality of true firs; dense stagnated stands, last burned around 1900.
- Fire Regimes I and IIIA portions of IIIB: increased stocking levels, increased presence of fire susceptible species, increased ladder fuels, increased risk and incidence of mortality from insects and disease, increased drought stress. Last ecologically significant burns occurred before 1910.

- Badger-Tygh sub watershed: high levels of tree mortality from recent spruce budworm epidemic within the Badger Creek Wilderness. Last burned in mid-to early 1800s.
- Dog River section of The Dalles Watershed: increasing levels of tree mortality, extending northwards out of the Badger Creek Wilderness, north of the Fifteen Mile Creek Drainage. Access is limited; last recorded large fires were in the early 1900's.

All other areas have low to moderate fuel hazards. Overall, the FMU rates out a moderate risk due to the low number of annual fire starts but the increasing probability of escaped fires within the high hazard areas. The Badger-Tygh sub watershed has both the highest hazard and the highest probability of an escaped fire within the FMU. The fuel hazard on Frog Lakes Buttes is lower than Badger-Tygh sub watershed but the risk of an escaped fire is probably very similar. Both areas have very limited access (Badger-Tygh is a designated wilderness and Frog Lakes Butte is in a road less area) that greatly increases initial attack time and both are fully exposed to strong westerly winds. New wilderness additions also fall into these categories, being the Lower White River,

The Fire Regimes at high hazard currently have a lower probability of an escaped fire due to level of access and the favorable terrain for use of dozers and engines in initial and extended attack. These areas have also been the target for much of the Forest's hazardous fuels reduction budget. Much of this area is fully exposed to strong westerly winds.

Control problems and dominant topographic features

Forest topography changes considerably as you travel from the east end of the FMU to the west, and on the Northern side, the Badger Wilderness rises up from the plain.

On the east end, the ground is relatively flat except for the north side in the Badger Wilderness. Fires are generally accessible by engines, but as roads become less maintained, access may be limited. Water while abundant in the various drainages, is limited in access for any water operations. Smokejumpers are sometimes used to support IA hand crews hiking into wilderness or un-roaded areas.

As one travels west, the topography rises. Gently at first then steeper as the crest of the Cascades is reached, in this case the ridge line to the east of Hwy 35. Several significant watersheds transect the FMU. These watersheds all flow west to east. Some have cut steep rocky canyons where limited road crossings can impact response times.

Other elements of the fire environment

The FMU is bordered on the eastern edge by a mix of private and other government lands. These include the Oregon Department of Fish and Wildlife's White River Big Game Management Area, private timber and farmland, a private

sub-division know as Sportsman's Park within National Forest land consisting of approximately 100 homes located on the western edge of Rock Creek Reservoir. On the eastern side of this reservoir is the Rock Creek Campground. The Rock Creek area is a popular dispersed camping area. Just west of Rock Creek off of NF lands is the Resort community of Pine Hollow and the community of Wamic. To the south of Wamic on the south side of White River is the community of Pine Grove. These communities are all listed as Oregon Interface Communities at Risk. The Barlow Ranger District also maintains two Work Centers in the FMU. They are Rock Creek located on the east side of Rock Creek Reservoir and Bear Springs located along State Highway 216 on the southern edge of the FMU.

Historical Fire Occurrence

It is evident that most early settlers initially copied the American Indian burning practices in the Watershed. Sheep men routinely burned the high country to maintain pasturage. Travelers in the forest burned the trails to keep them clear. Annual maintenance on the Barlow Road consisted of burning up as far as Immigrant Spring and possibly further (**White River Watershed Analysis**). In 1905, the Forest Service was created. Fire exclusion quickly became a reality due to ease of initial attack and fire control in the FMU. The combination of significant reduction in fire, fertile soil, and favorable moisture regime due to an open canopy and relatively little completion allowed a veritable explosion in successful conifer regeneration. Various documents dated 1939 indicate a 60% loss in available grazing lands, primarily due to tree encroachment, and a dramatic increase in conifer regeneration throughout the forest (**White River Watershed Analysis**).

A look at more recent fire history can be found in the following table. This is data taken from the period 1980 through 2009. The data is sorted by statistical cause.

Number of fires and acres by Statistical Cause 1980 - 2009, Eastside FMU.

Cause	Number of Fires	Acres Burned	% of Fires	% of Acres
Lightning	134	228.3	28.4%	24.9%
Equipment	13	217.9	3.8%	23.8%
Smoking	72	193.5	21.3%	21.1%
Campfire	160	49.95	47.3%	5.5%
Debris Burn	15	154.5	4.4%	16.9%
Railroad	0	0	0.0%	0.0%
Incendiary	14	5.4	4.1%	0.6%
Children	6	0.9	1.8%	0.1%
Miscellaneous	58	64.62	17.2%	7.1%
Total	472	69.9	100%	100%

3.2.2.4.2 Weather

Weather patterns influencing fire behavior and historical weather analysis

The weather factors that most often lead to large-scale, stand replacing fire are prolonged drying under stable high-pressure systems followed by strong westerly winds. Strong westerly winds occur when intense thermal lows develop in the Columbia Basin east of the Deschutes River. Intense thermal lows develop from prolonged surface heating and high temperatures, creating strong convective air currents over a large area. The strongest winds typically occur between mid-July and early September and can exceed 40 mph at eye level. Analysis of recent and past fire patterns reveals that the largest fires in the FMU burned under strong westerly winds. The finest recent example of this in the FMU has been the Rocky Fire in 1973. This 7400-acre fire burned in the Rock-Three mile portion of the FMU and was a wind driven fire. Another example of wind driven fire is the 350-acre 1979 Pine Grove fire. This fire burned on state protected land but fits the classic east side wind driven model.

A contributing factor to both of these fires was the heavy levels of both untreated pre-commercial thinning slash and heavy accumulations of natural fuels coupled with heavily overstocked stands.

The Eastside FMU has two Remote Automated Weather Station (RAWS) within its boundaries. They are Wamic Mill RAWS, and Pollywog RAWS. Wamic Mill is located at an elevation of 3320 feet. It is positioned mid-slope on an east aspect. The surrounding fuel model is an NFDRS Model G. Pollywog is located at an elevation of 3320 feet. It is positioned mid-slope on a south aspect. The surrounding fuel model is an NFDRS Model G.

ERC values. Weather data period, 1980-2009.

Station	Wamic Mill	Pollywog
Model	7G2P2	7G2P2
Index	ERC	ERC
90 th	74	71
97 th	81	77

Precipitation ranges from 45 inches near the Cascade Crest to 18 inches at the eastern forest boundary.

Elevation ranges from 5600 feet at the crest to 2000 feet in the east.

3.2.3. Hood River

3.2.3.1 FMU Snapshot

This section is optional. If included, complete only the information that is applicable and necessary for initial dispatch and include a map of the specific FMU.

Fire Behavior Indicator: ERC

NFDRS Weather Station:

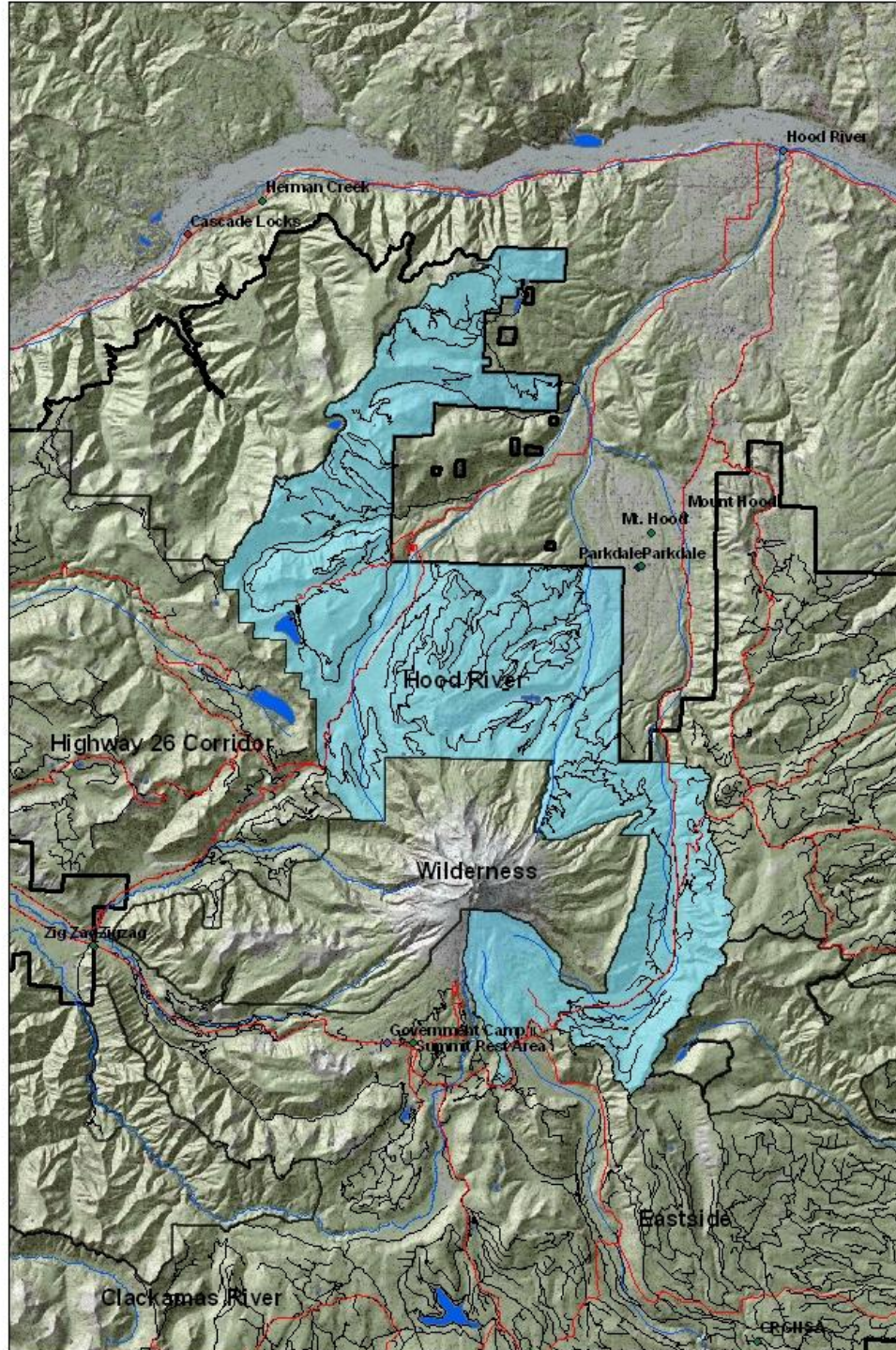
350811 - Blue Ridge

Acres/Agency: 156,036

Predominant Vegetation Types: Plant Association groups range from Moist Pacific Silver fir on the upper slopes of Mt. Hood to the Moist Grand fir group near the valley floor.

IA Dispatch Office: Columbia Cascade Communication Center

LMP Options available for response to ignition: The preferred fire suppression strategies and tactics are those that provide primarily for firefighter and public safety and secondly will be the most cost-effective commensurate with the objectives for the Fire Management Unit (FMU) and/or Land Management Area within which the fire occurs. Initial action on all wildfires will be to suppress the fire at the lowest cost with the fewest negative consequences with respect to firefighter and public safety.



Hood River Fire Management Unit

3.2.3.2 FMU Guidance

Standards & Guidelines

A2 WILDERNESS

Preference shall be given to those suppression methods and strategies resulting in the least practicable area burned, commensurate with cost-effectiveness, and having the least effect on wilderness values.

A2-107

Human-caused wildfires shall be suppressed.

A2-108

A3 RESEARCH NATURAL AREA

Preference shall be given to those suppression methods and strategies resulting in the least practicable area burned, commensurate with cost-effectiveness, and having the least effect on the studies and values in the Research Natural Area.

A3-043

Human-caused wildfires shall be suppressed. Application of fire retardant or use of tractors should not occur during fire suppression actions.

A3-044, A3-045

A9 KEY SITE RIPARIAN AREA

Heavy equipment (e.g. tractors) should not be used for fire suppression.

A9-041

Application of chemical fire retardants should be minimized.

A9-042

B7 GENERAL RIPARIAN AREA

Tractor firelines should not be constructed. Perpendicular crossing may be permitted with subsequent rehabilitation.

B7-065, B7-066

3.2.3.3 FMU Characteristics

3.2.3.3.1 Safety

- Aviation Hazard: Power-line Corridor
- Insect Damaged Timber Stands
- Numerous dispersed recreation sites
- Potential for high amount of traffic including ATVs due to high recreation use
- Access/Egress – numerous heavily brushed in dead end 2 track roads, steep narrow roads with numerous blind corners with limited shoulder and pull out opportunities

3.2.3.3.2 Physical

- The Hood River FMU is located in the northeast corner of the forest. The FMU is comprised of three separate watersheds and covered by the following watershed analysis, the West Fork of Hood River, the East Fork and Middle Fork Hood River. The FMU is approximately 156,036 acres in size.
- The primary access into and through the FMU is State Highway 35, Forest Road 17 and 13.
- Mt. Hood, a dormant volcano, is the dominate geographic feature in the FMU. There is a variety of different land features: steep drainages, flat benches, open meadow and high mountains. At lower elevation, the topography goes from rolling valley floors to steep rugged terrain at the higher elevations.
- Elevation range from 11245-foot summit of Mt. Hood to around 200 feet on the eastern edges and the Hood River Valley.
- Soils in the northern part of the FMU tend to be primarily composed of volcanic and volcanoclastic rocks (basalt, andesite, tuff, tuff breccias, pyroclastic flows) with scattered deposits of glacial till. In the southern portion of the FMU soils tend to have a deep ash mantel with occasional rock outcrops. In general ashy soils tend to have high water holding capacity are compacted easily, have low inherent fertility and erode easily on slopes greater the 30%
- There are no Class I air sheds in the Hood River FMU. The adjacent Mt. Hood Wilderness is a Class 1 air shed.

3.2.3.3.3 Biological

- Vegetation in the FMU ranges from Oak and brush in the lower elevations to a mixed conifer fir forest at higher elevations
- Wildlife habitats: the lower elevations of the FMU are winter range for both deer and elk.
- Sensitive Species: Sensitive plants are present within the FMU.

- Fish: Cutthroat trout (*Oncorhynchus clarkia*)
- Mollusks: Malone jumping slug (*Hemphillia malonei*)
- Threatened/endangered Species: Threatened plants are present within the FMU.
- Fish: Steelhead trout (*Oncorhynchus mykiss*)

3.2.3.3.4 Resources

The Hood River FMU has numerous areas of high public use that may be difficult to evacuate. Trigger points for evacuation will be identified early in the incident. The Bull Run Municipal Watershed, private property, Columbia River Gorge NSA and Wilderness Areas border the FMU. Several historical structures exist within the FMU. Resorts with heavy year round use are also present. Below are tables containing lists of these values and the consequence rating if they are destroyed.

Value: Municipal Watershed	Consequence: High
Crystal Springs	Watershed for the upper and Middle Hood River Valleys
Narrative: Crystal Springs supplies the water for the Upper and Middle Hood River Valleys, population of approximately 3,000.	

Value: Private In-holding	Consequence: High
White River Boy Scout Lodge	Boy Scout Camp
Narrative: Public Safety. High consequence due to the infrastructure, public use, and potential evacuation of users. There are several wood structures, utilities, and water tower in this site. The heaviest use typically occurs May – October. Evacuations could be difficult due to the amount of users at any given time.	

Value: Forest Boundary	Consequence: High
Forest Service boundary with private property, Oregon Department of Forestry, BLM, ODF&W, and Columbia Gorge NSA.	Boundary
Narrative: Public Safety. There will be increased complexity due to multiple jurisdictions from state and federal agencies. There could be a potential for public evacuations. There is a potential for loss of personal property, property values and possible displacement of property owners for an extended period of time.	

Value: Lookout/Repeater	Consequence: High
Clear Lake Lookout	Lookout/Repeater Site
Indian Mt	Repeater Site
Mill Cr. Butte	Repeater Site
Mt. Defiance	Repeater Site
Narrative: High values at risk are due to infrastructure, public and Forest Service use, and potential evacuation of the personnel at the lookout. The repeater sites have various public, state, and federal users.	

Value: Resort/Trailhead	Consequence: High
Cooper Spur	Resort/Ski Area/Trailhead
Mt. Hood Meadows	Resort/Ski Area/Trailhead
Tea Cup Lodge	Resort/Ski Area/Trailhead
Narrative: Public Safety. Cooper Spur, Mt. Hood Meadows, and Tea Cup Lodges are all heavily used areas during the entire year. Each area has trailheads that are heavily used typically from May – October. Expect evacuations of resorts, trails, homes, and trailheads. Evacuations could be difficult due to the amount of users at any given time.	

Value: Campground/Trailhead/SnoPark	Consequence: High
Laurence Lake	Campground
Lost Lake	Campground
Frog Lake	Campground/Trailhead & Sno-Park
Nottingham	Campground
Clear Lake	Campground
Narrative: Public Safety. All are consequence due to infrastructure, public and Forest Service use and potential evacuations. Infrastructure consists of numerous wood structured buildings, picnic areas, Forest Service signs and bulletin boards. Campgrounds are operated under a concessionaire permit; the heaviest use is from May – October.	

Value:	Consequence: High
Tilly Jane	Campground/Historical Buildings
Cloud Cap Inn and Snowshoe Club Cabin	Historical Buildings
Cloud Cap Saddle	Campground
Cooper Spur Hut	Historic Building
Narrative: Public Safety. All are high values at risk due to the infrastructure, public and Forest Service use, historical value, and potential evacuation of users. The heaviest use typically occurs June–October.	

Value:	Consequence: Moderate
Barlow Creek	Campground
Barlow Crossing	Campground
Bennet Pass Sno*park	Sno*park
Black Lake	Campground
Gibson Prairie Horse Camp	Campground & corrals
Little John Sno*park	Sno*park with log shelter
Rainy Lake	Campground
Sherwood	Campground
Whatum Lake	Campground
White River Sno*park	Sno*park
Narrative: Public Safety. All are moderate due to limited infrastructure. Infrastructure consists of CXT toilets, paved or unpaved parking, picnic tables and Forest Service signs or bulletin boards. The above campgrounds are all under a concessionaire contract with the exception of Gibson Prairie Horse Camp. Public use varies depending on time of year; typically, the heaviest use is during May – October.	

Value: Trailheads/Campgrounds/Picnic Area/Viewpoint	Consequence: Low
Barlow Butte	Trailhead
Blue Box	Trailhead
Catalpa Lake	Trailhead
Devils Half Acre	Campground
Dog River	Viewpoint
East Fork Robinhood	Trailhead
East Fork Tamanawas Falls	Trailhead
Elk Cove	Trailhead
Ghost Ridge	Viewpoint
Grave	Trailhead
Grindstone	Campground
Gumjuwac West	Trailhead
Gunsight	Trailhead
High Prairie	Trailhead
Huckleberry Mountain	Trailhead
Laurence Lake High Loop	Trailhead
Mazama	Trailhead
McGee Creek	Trailhead
Mt. Defiance South	Trailhead
Old Skyline-Lost Lake	Trailhead
Pacific Crest North-Indian Springs	Trailhead
Palmateer	Trailhead
Pinacle Ridge	Trailhead
Polallie	Trailhead
Polallie Creek	Picnic Area
Rim Rock	Viewpoint
Surveyors Ridge	Trailhead/Viewpoint
Top Spur	Trailhead
Umbrella/Sahalie	Trailhead
Vista Ridge	Trailhead
Warren Lake	Trailhead
Narrative: The sites are listed as low consequence due to limited or nonexistent infrastructure. Forest Service signs or bulletin boards may exist but are limited. Public use varies, but the highest use would be during May – October.	

3.2.3.4 FMU Fire Environment

- The vegetative patterns are highly variable within this portion of the FMU. Vegetative zones range from high alpine-non-vegetated types on the slopes of Mt. Hood, to Douglas fir woodlands in the lower or southern parts of the valley. These lower portions are part of the transition zone between eastside and westside vegetative types. Elevation and aspect play a large part in how vegetative patterns are distributed across the landscape, through Mt. Hood determines moisture distribution across the landscape, which also affects vegetative patterns.

- Historical Fire Occurrence**

As with all areas on the Forest, fire has had an influence on the landscape on the Hood River FMU. Vegetation patterns indicate that large fires burned in the upper reaches of the Hood River watersheds during the mid 1800's. Early records indicate that Native Americans used fire to clear trails and improve berry production. Early settlers used fire to clear land for agriculture. Sometimes these fires spread into the forest.

Large fires in the 20th century include the Skyhook fire in 1971 the fire was ignited on a Timber Sale by cable yarding and burnt 3000 acres. Fire occurrence rates are generally low for the entire area. No areas of concentrated starts occurred within in the FMU.

Fires rarely occur in multiple starts. Arson has not been a problem. Storms that form on the south side of Mt. Hood or over the Cloud Cap area typically result in individual lightning strikes on Surveyor's Ridge, which is located on the east edge of the FMU.

There has been an increase of bug pockets forming on the southern end of Surveyor's Ridge. Increasing the likely hood dry lightning ignited wildfires in this FMU. Most human caused fires have remained small. The following tables display fire occurrence for the FMU.

Number of acres fires Statistical Cause Hood River FMU, 1980 - 2009

Cause	Number of Fires	Acres Burned	% of Fires	% of Acres
Lighting	36	91	25.9	4.4
Equipment	5	0.5	3.6	0.2
Smoking	22	14.4	15.8	7.0
Campfire	52	6.7	37.4	3.3
Debris Burn	5	18.8	3.6	9.1
Railroad	0	0	0.0	0.0
Incendiary	2	0.3	1.4	0.1
Children	0	0	0.0	0.0
Miscellaneous	17	156.1	12.2	75.8
Total	139	205.9		

3.2.3.4.1 Fire Behavior

The Hood River FMU includes a range of fire regime categories (I,IIIA,IIIB,IIIC,IVB,IVC,VA) with fire frequency ranging from 35 years in fire regime I to 100+ year stand replacing fires in fire regimes IIA, IIIB,IIIC IVB, IVC and VA.

- Fuels conditions in the FMU likely to influence fire behavior: Live fuel moistures in mixed conifer and Douglas fir stands with a heavy component of dead surface fuels would be a significant factor in fire spread and intensity. There significant portions of the FMU that have large amounts of beetle kill creating a continuous ladder fuels.
- Potential Control Problems:
 - Heavy fuel loading in much of the forested areas.
 - The FMU is influenced by both West and East winds events.
 - Steep slopes.
 - Limited road access due to closed roads.

3.2.3.4.2 Weather

The thermal trough creates what are regionally referred to as east wind events. The thermal trough will build along the coast creating an area of low pressure. As a result, winds originating in Eastern Oregon will develop as east winds bringing warm dry air to the west side of the Cascades. This wind will increase in speed through saddles and gaps and accelerate downhill as well; though some areas may be sheltered from the east wind. However, all areas west of the Cascades will experience very low minimum RH with little recovery overnight. This enables wind driven spread in areas directly impinged by east winds, terrain driven spread in areas sheltered from the wind, and active burning through the night. Thermal troughs associated with high Haines days or atmospheric instability create a very high potential for large fire growth near the crest. September and October are months during the fire season this most frequently occurs.

A marine push may occur as the thermal trough moves off to the east, but a marine push may also occur independently of the thermal trough. The moderate/strong marine push brings moist air to the west side of the Cascades but also creates a west winds and instability on the east side of the Cascades. A Foehn effect may also occur as the Cascades form a barrier to moisture moving westward and causing warm dry air to rush down the east slope of the Cascades.

When a thermal trough is forecasted for the area, expect strong easterly winds, very low minimum RH, and little recovery and active fire spread through the night. This pattern may persist for several days. When a moderate or strong marine push is forecasted, the east slope of the Cascades should expect gusty westerly winds, instability with development of thunderstorms, and warm, dry, and gusty downhill winds from the crest of the Cascades. In both cases, expect the potential for wind that accelerates through the gaps and gorge.

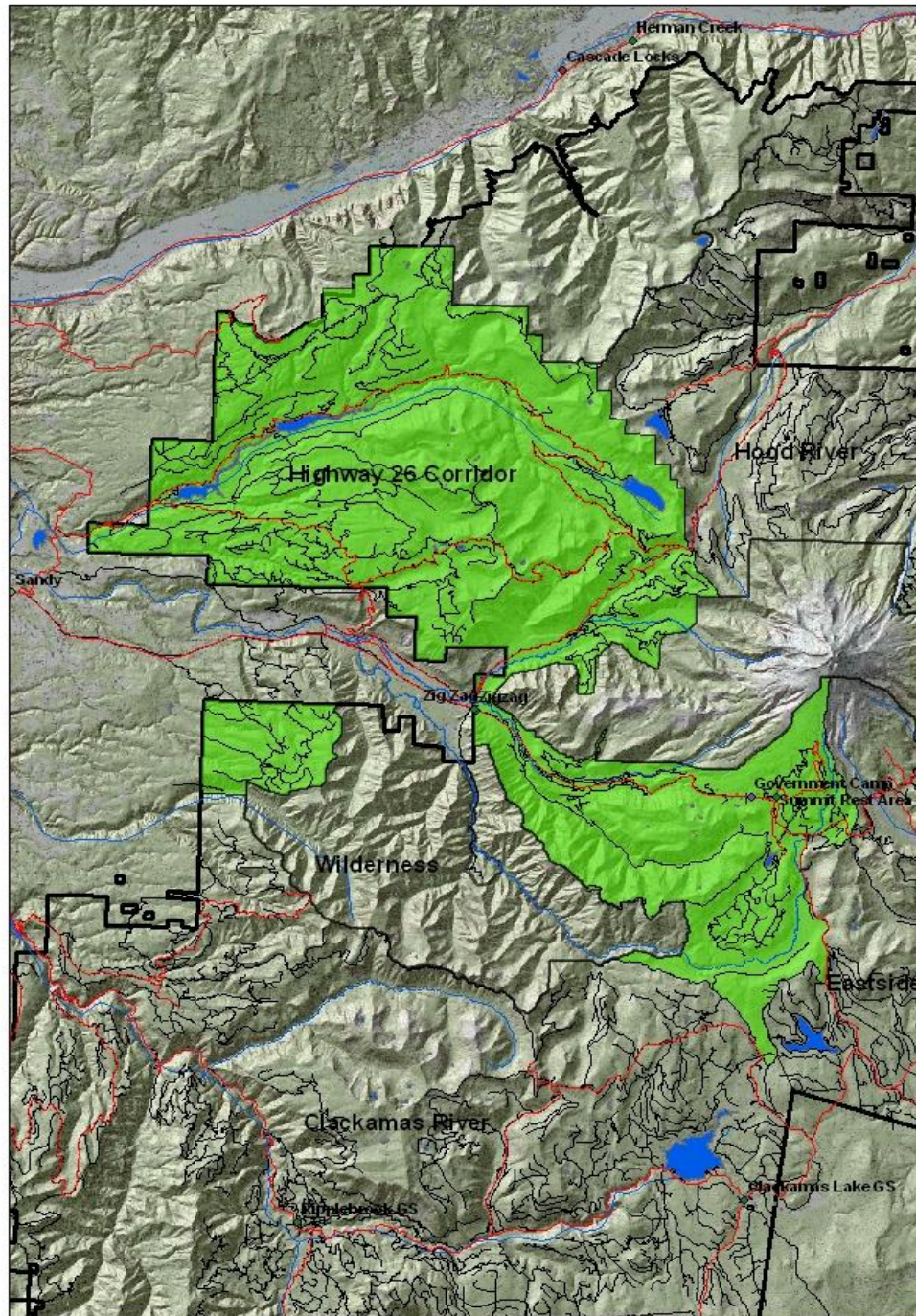
Average annual precipitation ranges from 35 to 45 inches. The presence of Mt. Hood also provides a significant weather influence in the area. Even though when there are east winds and west winds, they do not affect the mountain. The down slope winds coming off Mt. Hood prevail over east winds and west winds. Thunderstorms are common from mid June through September.

Fire Season determination: Most fires occur in June, July August and September from lightning associated with cold fronts. Historically the Hood River FMU has had large fires in the fall when east winds are present.

3.2.4. Highway 26 Corridor

3.2.4.1 FMU Snapshot

- Fire Behavior Indicator: ERC
- NFDRS Weather Station: Log Creek - 350604
- Acres/Agency: 183,749
- Predominant Vegetation Types: Plant association Groups include Western Hemlock, Pacific Silver fir, Alpine/Sub alpine, and Mountain Hemlock zones.
- IA Dispatch Office: Columbia Cascade Communication Center
- LMP Options available for response to ignition: The preferred fire suppression strategies and tactics are those that provide primarily for firefighter and public safety and secondly will be the most cost-effective commensurate with the objectives for the Fire Management Unit (FMU) and/or Land Management Area within which the fire occurs. Initial action on all wildfires will be to suppress the fire at the lowest cost with the fewest negative consequences with respect to firefighter and public safety.



Highway 26 Corridor Fire Management Unit

3.2.4.2 FMU Guidance

Standards & Guidelines

- *Key Site Riparian Area - A9:* Heavy equipment should not be used for fire suppression. Use of chemical fire retardants should be minimized.
A9-041, A9-042
- *General Riparian Areas - B7:* Dozer firelines should not be constructed during wildfire suppression activities, although perpendicular crossings are allowed with subsequent rehabilitation.
B7-065, B7-066
- *Bull Run Watershed - D Series:* Application of aerial fire retardants in fire suppression shall be permitted only as approved by the City of Portland Water Bureau.
DA1-011
- Use of ground machines (e.g. tractors) in Research Natural Areas in suppression of wildfires shall be prohibited.
DA3-005
- Prevention actions should complement the development and experience level planned for the site.
A10-025
- Management of down woody material should complement the development and experience level planned for the site. See Forest wide Wildlife Standards and Guidelines regarding snags and down logs.
A10-027
- Pile burning may occur consistent with Management Area management direction.
A10-029
- Exceptions to the snag and sown log Standards and Guidelines may occur within: FW-240
 - Retention and Partial Retention near-foreground (i.e. 200 feet) areas within B2 Scenic View sheds and Designated View sheds (see Forest wide Visual Resource Management Standards and Guidelines).
 - A10 Developed Recreation, e.g. campgrounds and Zig Zag Summer Homes.
 - A11 Winter Recreation Areas, i.e. downhill ski slopes.
- Exceptions to organic matter (e.g. down woody debris) management direction (see Forestwide Wildlife, Forest Diversity and Soil Productivity Standards and Guidelines) may occur within Retention and Partial Retention near-foreground areas (i.e. 200 feet) of designated viewsheds as necessary to achieve visual quality objectives. FW-583

3.2.4.3 FMU Characteristics

3.2.4.3.1 Safety

- Urban development, summer homes, ski areas
- Steep narrow roads, heavy recreation traffic
- Steep terrain
- Powerline corridor
- Insect damaged timber stands
- Potential need for traffic control and possible evacuation coordination
- Numerous dispersed recreation sites
- Large decadent hazard trees/snags

3.2.4.3.2 Physical

Location Description

This Fire Management Unit is located in the northwest corner of the forest. The FMU boundaries begin at the Forest Service Boundary on the west and follow the Bull Run watershed boundary to the north and northeast. The boundary continues along the Cascade crest to the south. The boundary then follows the north side of Salmon-Huckleberry Wilderness boundary to the west. The FMU is covered under four separate watershed analysis. They are Salmon River, Upper Sandy, Zigzag and Bull Run. The FMU covers approximately 183,749 acres. The primary access into and through the FMU is US Highway 26, Forest Road 10 and 18.

Topography

Huge expanses of the FMU are rugged. Above them all towers Mt. Hood, the tallest peak in Oregon, and one of the tallest in the Northwest. One of the volcanoes in the Cascade Mountain Range, this two-mile-high mountain never loses its cap of snow.

Elevation

Elevation ranges from 900 feet in the western foothills to the 11,239-foot summit of Mt. Hood.

Soils

The soils in this FMU are variable. Mitigate for compaction, sediment runoff into streams and lakes, invasive weed dispersal and erosion.

Air Quality

The FMU is adjacent to class one air sheds (Mt. Hood and Salmon-Huckleberry Wilderness).

Residential Areas and communities:

- Government Camp
- Wapinitia
- Summit Meadows
- Rhododendron
- Zigzag
- Welches
- Brightwood
- Sandy

Transportation Corridors:

- Hwy. 26

3.2.4.3.3 Biological

Vegetation

Vegetation zones found in this FMU are the Western Hemlock, Pacific Silver fir, Mountain Hemlock and Alpine/Sub alpine. These groups generally lack the fine fuel loadings found in other groups. They are characterized by deep duff and heavy loading of large logs. The resulting wildland fire hazard is usually low to moderate, depending on weather conditions in a given year. Most years the associations in this group retain moisture well and are slow to dry. Once the duff dries, however, it will carry fire. Prolonged smoldering in deep duff and punky logs is common. In these stands, high severity stand replacing fire will dominate during large fires.

Wildlife

Threatened/Endangered/Sensitive Species- Sixteen species of wildlife are classified as threatened, endangered, or sensitive and may occur on the Zigzag Ranger District including: cope's giant salamander, Larch Mountain salamander, red-legged frog, Spotted frog, Painted turtle, Western pond turtle, Northern bald eagle, Common loon, American peregrine falcon, Greater sandhill crane, Northern spotted owl, Harlequin duck, Black rosy finch, Townsend's big-eared bat, White footed vole, and California wolverine.

Habitat

The Mt. Hood National Forest provides a wide diversity of wildlife habitat conditions. It is also located in an urban situation which provides opportunities for many people to interact with wildlife. Impacts to wildlife related to fire can

be both beneficial and harmful. Most prescribed fire-plans require NEPA documentation that describes mitigation measures and best management practices. Fire personnel should be familiar with those measures prior to implementing proscribed fires.

Fisheries

There are three federally threatened salmonid species which are known to occur within the Upper Sandy River Watershed: Lower Columbia River (LCR) Chinook salmon, LCR steelhead, LCR Coho salmon. Additionally, Columbia River Bull trout were historically present in the basin and therefore are included in this list of TES species. Four aquatic invertebrate species on the Forest Service Regional Forester's Special Status Species list including: Columbia dusky snail, Barren juga, Purple-lipped Juga, and Scott's Apatanian Caddisfly which may occur on the Zigzag Ranger District and within the Upper Sandy River Watershed and for the purposes of this FMP are assumed to be present. Federally designated "Critical Habitat" also exists for all the above mentioned TES species in the Watershed.

Prior to any in-stream or in-water fire related activities, including pump chance operation/maintenance or water drafting, please contact District fisheries biologist to ensure compliance with threatened species laws.

Areas of Special Interest

Located east of the community of Rhododendron along US Highway 26 is a large subdivision of summer homes on National Forest Land. These homes are located along both sides of the highway. There are a total of 557 privately owned residences permitted in this area. Narrow one-lane roads off Hwy. 26 access most of these areas. Most of these roads are not adequate for modern structure and wild land fire vehicles. These areas are an Urban Interface concern for the Forest. Steps have been taken by the Zigzag Ranger District, Hoodland Fire Department, Clackamas County, and the Forest to educate Homeowners on building defensible space in the event of a fire. These areas were also identified as a high priority for treatment in the Clackamas County Community Wildfire Protection Plan.

3.2.4.3.4 Resources

Values at Risk

The Hwy 26 FMU has numerous areas of high public use and WUI that may be difficult to evacuate. Trigger points for evacuation will be identified early in the incident. The private property, Columbia River Gorge NSA, BLM and Wilderness Areas border the FMU. Several historical structures exist within the FMU. The Bull Run Municipal Watershed is within the FMU. Resorts with heavy year round use are also present. Below are tables containing lists of these values and the consequence rating if they are destroyed.

Value: Municipal Watershed	Consequence: High
Bull Run Watershed	Municipal Watershed
Narrative: Bull Run Watershed is the primary drinking water supply for the City of Portland. This watershed is 95,382 acres in size and closed to public access. Activities within the watershed are primarily associated with the administration of the water supply. On the lower sections of the Bull Run River within the Forest boundaries, the City of Portland operates two dams that create two reservoirs storing a combined estimated 17 billion gallons of water. The City also owns two hydroelectric plants inside the watershed.	

Value: Portland General Electric (PGE) Inholdings	Consequence: High
High Tension Power Lines	Portland General Electric (PGE) Inholdings
Narrative: Fire in proximity to these facilities has the potential to affect power supply to the Portland Metro area.	

Value: Forest Boundaries	Consequence: High
Clackamas County	Boundary
Private Property	Boundary
Columbia River NSA	Boundary
Salem Bureau of Land Management (ODF Protection)	Boundary
Narrative: Increased complexity due to multiple jurisdictions and potential evacuation. Potential exists for the loss of personal and public property.	

Value: Urban Interface Communities, Private Inholdings	Consequence: High
Forest Service Summer Homes	Urban Interface Communities, Private Inholdings
Government Camp	Urban Interface Communities, Private Inholdings
Mt. Hood Kiwanis Camp	Urban Interface Communities, Private Inholdings
Rhododendron	Urban Interface Communities, Private Inholdings
Summit Meadows	Urban Interface Communities, Private Inholdings
Wapinitia	Urban Interface Communities, Private Inholdings
Welches	Urban Interface Communities, Private Inholdings
Zigzag	Urban Interface Communities, Private Inholdings
Narrative: These communities and inholdings are located along the Highway 26 corridor. They are covered by Hoodland Fire District #74 based in Welches. There will be increased complexity due to multiple jurisdictions and potential for evacuation. It consists of 6 separate communities with poor egress and ingress containing both year round residences and vacation homes.	

Value: Radio Repeaters	Consequence: High
Timberline	Radio Repeaters
Narrative: Critical for forest-wide communication. High replacement costs.	

Value: Ski Areas	Consequence: High
Mt. Hood Skibowl	Ski Areas
Summit Ski Area	Ski Areas
Timberline Lodge	Ski Areas
Narrative: High replacement cost, high visitor use, historic value.	

Value: Recreation Areas (Non-Campground)	Consequence: High
Mirror Lake	Recreation Areas (Non-Campground)
Old Maid Flats	Recreation Areas (Non-Campground)
Pacific Crest Trail	Recreation Areas (Non-Campground)
Trillium Lake	Recreation Areas (Non-Campground)
Narrative: Non-Developed Recreation Areas with potential for high public use, difficult evacuation, possibility of costly, timely trail clearance patrols.	

Value: Campground and Horse Camp	Consequence: High
Lost Creek	Campground
McNeil	Campground
Riley	Horse Camp
Narrative: High consequence values due to infrastructure, public use and potential for difficult evacuation. Infrastructure will consist of some wood constructed buildings, toilets, covered picnic areas, signs and bulletin boards, and parking areas. Public use in these areas can be extremely heavy from July through October. Trigger points for evacuation shall be identified.	

Value: Forest Service Facilities	Consequence: High
Summit Bunkhouses	Forest Service Facilities
Zigzag Ranger Station	Forest Service Facilities
Narrative: These facilities are historic in nature. Public safety and high replacement costs place make these values of high consequence.	

Value: Campground and Picnic Area	Consequence: Moderate
Alpine	Campground
Camp Creek	Campground
Green Canyon	Campground
Still Creek	Campground
Summit Lake	Campground
The Cove	Campground
Tollgate	Picnic Area
Trillium Lake	Campground
Narrative: Moderate consequence values due to limited infrastructure and easy egress/ingress. All sites are located on the Highway 26 corridor, which provides for rapid emergency response and unrestricted two-way traffic.	

Value: Wilderness Boundaries	Consequence: Moderate
Mt. Hood Wilderness Area	Wilderness Boundaries
Roaring River Wilderness Area	Wilderness Boundaries
Salmon Huckleberry Wilderness Area	Wilderness Boundaries
Narrative: Fire trespassing onto designated wilderness areas will have minimal impact to infrastructure and public safety.	

3.2.4.4 FMU Fire Environment

This FMU is dominated by long interval Fire Regimes. Most common is Regime VA, the 200-400 year Stand-replacement regime. This fire regime includes all of the associations in the western hemlock, silver fir, and mountain hemlock series. The presence of this type of vegetation in the upper portion of watersheds corresponds with the maritime climate. Yearly precipitation is particularly high, 54-120 inches, as compared to other FMU's on the Forest. Historic fire intervals, in this fire regime, exceed 200+ years. Current conditions of all regimes in this FMU do not differ much from historic regimes. As long as weather conditions are not severe, wet forests provide a barrier to the spread of fires. Fire suppression had reduced the extent of fires that have occurred within the wet forest communities.

3.2.4.4.1 Fire Behavior

Control problems and dominant topographic features

Fire activity in the FMU is generally low. Most fires are small, less than .5 acres. Initial attack of fires has been successful for most of the last few decades. Much of the FMU is inaccessible due to terrain, wilderness, or permanent closures. Lightning activity is low. Due to the dense fuel type and terrain it is not uncommon to have a small smoldering lightning fire go undetected for several weeks.

One of the most prominent features of this FMU is the Bull Run Watershed. This area is closed to Public entry and very little activity takes place within the boundaries. Fire activity has been very low within the watershed. Still the threat of catastrophic wildland fire does exist. A large stand replacement fire would be destructive to the water supply of the City of Portland. The Forest maintains a lookout tower within the Watershed and a patrol goes through daily during high fire danger. Many of the roads within the watershed are no longer maintained and some have been closed, limiting access for ground based fire forces in the event of a start.

Historical Fire Occurrence

Fire has been a major influence in the FMU. Throughout the 1800's and early 1900's. Significant fires of 1,000 acres or more have occurred in the watershed within the last 200 years. From the available documentation, one of the early fire occurrences was around 1852 and burned an area near Government Camp. The largest fire recorded was the Sherar burn in 1915 that burned 10,000 acres. The cause of this fire is listed as lightning. The most recent significant fire, the Zigzag Burn, occurred in October 1952 and burned over 1,000 acres. As documented in the survey of the Cascade Range Forest Reserve in 1901, "fires burned throughout most of the area with little or no human effort to suppress them". It is believed that many of the fires were intentionally set by sheepherders (to increase acreage of rangeland), by hunters (to drive game animals into traps), or were started unintentionally by unattended campfires. American Indians are also believed to have intentionally set fires to improve berry-picking fields and to increase forage for animals.

In the last five decades, there have been no large fires in the FMU. A look at recent fire history is found in table 3-9. This data is taken from the period 1980 through 2007.

Number of Fires and Acres by Statistical cause 1980 - 2009.

Cause	Number of Fires	Acres Burned	% of Fires	% of Acres
Lightning	20	9.9	15%	18%
Equipment	1	4	1%	7%
Smoking	15	3.6	11%	7%
Campfire	52	11.8	38%	22%
Debris Burn	2	4.1	1%	8%
Incendiary	12	2	9%	4%
Children	1	.1	1%	0%
Miscellaneous	33	18.5	24%	34%
Total	136	54	100%	100%

In general, much of the FMU consists of older forest unburned for centuries, a fair amount of younger forest in the western portion of the FMU initiated by 19th century fires, and little significant natural fire activity in the 20th century. The Bull Run appears to burn infrequently and contains a large proportion of old-growth forest as a result.

3.2.4.4.2 Weather

Weather patterns influencing fire behavior and historical weather analysis

The thermal trough creates what are regionally referred to as east wind events. The thermal trough will build along the coast creating an area of low pressure. As a result, winds originating in Eastern Oregon will develop as east winds bringing warm dry air to the west side of the Cascades. This wind will increase in speed through saddles and gaps and accelerate downhill as well; though some areas may be sheltered from the east wind. However, all areas west of the Cascades will experience very low minimum RH with little recovery overnight. This enables wind driven spread in areas directly impinged by east winds, terrain driven spread in areas sheltered from the wind, and active burning through the night. Thermal troughs associated with high Haines days or atmospheric instability create a very high potential for large fire growth near the crest. September and October are months during the fire season this most frequently occurs.

The FMU has one RAWS station. This is the Log Creek RAWS located in the Bull Run Watershed. The surrounding fuel model is fuel model G. The log Creek RAWS is located at an elevation of 2500 feet at mid slope on a west aspect.

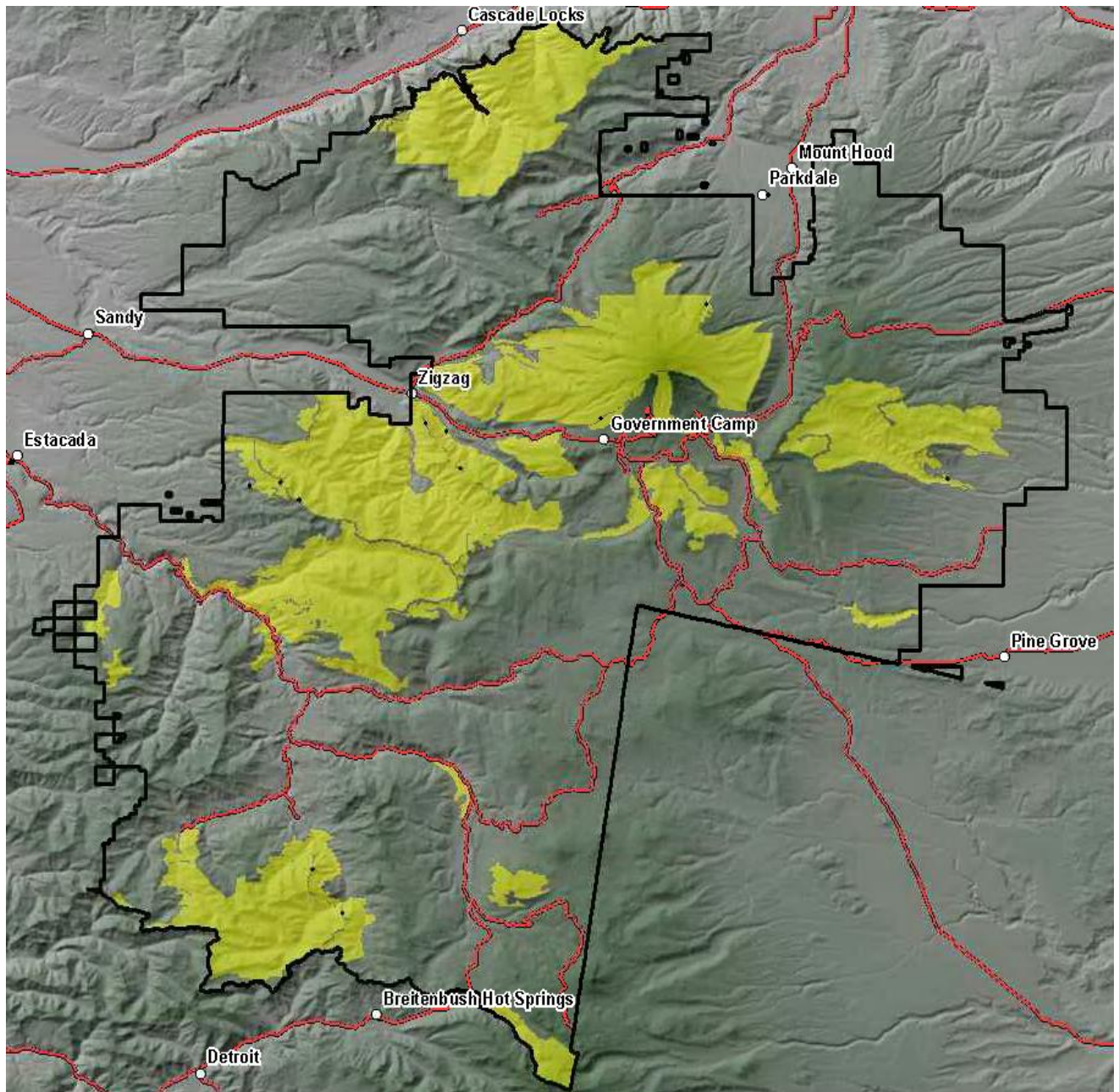
ERC values. Weather data period 1980-2009.

Station	Log Creek
Model	7G3PE3
Index	ERC
90th	36
97th	44

3.2.5. Wilderness

3.2.5.1. FMU Snapshot

- Fire Behavior Indicator: ERC
- NFDRS Weather Station: No Specific station
- Acres/Agency: 182,147
- Predominant Vegetation Types: Varied
- IA Dispatch Office: Columbia Cascade Communication Center
- LMP Options available for response to ignition: The preferred fire suppression strategies and tactics are those that provide primarily for firefighter and public safety and secondly will be the most cost-effective commensurate with the objectives for the Fire Management Unit (FMU) and/or Land Management Area within which the fire occurs. Initial action on all wildfires will be to suppress the fire at the lowest cost with the fewest negative consequences with respect to firefighter and public safety.



Wilderness Fire Management Unit

3.2.5.2 FMU Guidance

Standards & Guidelines

Preference shall be given to those suppression methods and strategies resulting in the least practicable area burned, commensurate with cost-effectiveness, and having the least effect on wilderness values.

A2-107

Human-caused wildfires shall be suppressed.

A2-108

3.2.5.3 FMU Characteristics

3.2.5.3.1 Safety

In all of the wilderness FMU's the safety concerns are consistent. The areas have steep rugged terrain that varies in slope from 30% to vertical rock walls. The timber in these areas is extremely heavy and has substantial bug kill in some areas, leaving large areas of standing dead timber and heavy fuel loadings of dead and down material. Given the steep slopes and thick timber there is not many natural openings available for Safety Zones for the firefighters. Access to these areas is limited to hiking trails, there are some areas that smokejumpers might be able to jump into, but those are limited as well based on the terrain and vegetation. Communications can be an issue in some locations, due to the terrain and thick timber. The new designated wilderness Sisi has a campground by Olallie Lake that the ingress and egress could be a safety hazard if a fire was near or threatening the campground. The Badger Wilderness area has the same concerns with Badger Lake campground and within this wilderness is Flag point Lookout as well as an electronic site. Within the wilderness areas are extensive trail systems, that during fire activity would have to be patrolled to ensure that recreationists are not in harm's way.

3.2.5.3.2 Physical

The physical characteristics of the wilderness areas are typical of what a wilderness area should be: rough, inaccessible terrain, heavy fuel loadings of dead and down material, as well as standing dead, steep slopes, and thick timber. The vegetation in the areas consists of dense old growth Douglas fir, Hemlock, Western Red Cedar, Mixed conifer stands, and a thick understory of a variety of shrubs and grasses. There scattered open meadows, there are numerous rock outcrops and cliffs, and there are numerous streams, which includes

some major headwaters. The Badger Wilderness has extensive and persistent western spruce budworm outbreak which has resulted in very high levels of tree mortality.

3.2.5.3.3 Biological

- Vegetation ranges from Ponderosa Pine, Douglas fir stands to mixed conifer with Mountain Hemlock and Western Red Cedar.
- Anadromous fisheries as well as native populations exist in the areas.
- There are numerous raptors that are present as well, such as, Northern Spotted Owl, Goshawks, Bald Eagles, etc.
- Big game utilizes the areas as well.

3.2.5.3.4 Resources

The Wilderness FMU appears in fragments across the forest in 9 different wilderness areas. It shares boundaries with private property, WUI, municipal watersheds, state and county lands, BLM and other USFS administered lands. It contains numerous areas of high public use that may be difficult to evacuate. Trigger points for evacuation will be identified early in the incident. Several historical structures exist within the FMU. Below are tables containing lists of these values and the consequence rating if they are destroyed.

Badger Wilderness Area

Value: Campground/Repeater Site	Consequence: High
Badger Lake	Campground
Gumjuwac East	Campground
FlagPoint	Lookout/Repeater Site
Narrative: Public Safety. All are high values of risk due to public and Forest Service use and potential evacuations. Infrastructure consists of CTX toilets, pave and unpaved parking areas, picnic tables, and Forest Service signs and bulletin boards. Badger Lake Campground has extremely limited ingress and egress access to the campground, possible evacuations of forest users could be very difficult due to the access issue. Flag Point Lookout is a staffed lookout from July – September and the remainder of the year is utilized a rental for recreation users. There is a helispot for possible evacuations and the access into this lookout is adequate, however, due to the road conditions it takes some time to get out of the area.	

Roaring River Wilderness Area

Value: Campground/Trailhead	Consequence: High
Twin Springs	Campground
Frazier Turnaround	Trailhead
Narrative: Public Safety. All are high values of risk due to public and Forest Service use and potential evacuations. Infrastructure consists of CTX toilets, pave and unpaved parking areas, picnic tables, and Forest Service signs and bulletin boards. These trailhead lead into a vast trail system within these wilderness areas, which the heaviest use is typically May – October.	

Bull of the Woods Wilderness Area

Value: Lookout	Consequence: High
Bull of the Woods	Lookout
Narrative: Bull of the Woods lookout is historical; access into the lookout is by trail or by helicopter.	

Value: Recreation Site	Consequence: High
Bagby Hot Springs	Recreation Site
Narrative: High consequence value due to infrastructure, public use and potential for difficult evacuation. Infrastructure will consist of some wood constructed buildings, toilets, covered picnic areas, signs and bulletin boards, and parking areas. Public use in these areas can be extremely heavy between July through October.	

Mt Hood Wilderness Area

Value: Campground/Trailhead	Consequence: High
Grindstone	Campground
Palmateer	Trailhead
Top Spur	Trailhead
Vista Ridge	Trailhead
Narrative: Public Safety. All are high values of risk due to public and Forest Service use and potential evacuations. Infrastructure consists of CTX toilets, pave and unpaved parking areas, picnic tables, and Forest Service signs and bulletin boards. These trailheads lead to a vast trail system within these wilderness areas, of which the heaviest use is typically May – October.	

Salmon-Huckleberry Wilderness Area

Value: Trailhead	Consequence: High
Bonanza	Trailhead
Douglas	Trailhead
Plaza	Trailhead
Narrative: Public Safety. All are high values of risk due to public and Forest Service use and potential evacuations. Infrastructure consists of CTX toilets, pave and unpaved parking areas, picnic tables, and Forest Service signs and bulletin boards. These trailheads lead to a vast trail system within these wilderness areas, of which the heaviest use is typically May – October.	

3.2.5.4 FMU Fire Environment

3.2.5.4.1 Fire Behavior

- Fire has been excluded from the wilderness areas. All fires that have been detected were extinguished. The fuel loadings are such that any given fire has the potential to be a stand replacing fire. The terrain and lack of adequate access makes it difficult and poses a hazard to firefighters, which could result in increased fire size. There are some areas that smoke jumpers or rappellers could be effective, but those areas are limited based on the terrain.
- The Badger wilderness has a large number of acres of dead and down bug killed trees, suppression actions could be limited due to safety concerns for the firefighters and the limited access to the area.
- Typically, the fires remain small and are easily suppressed, however, with strong winds and lack of access there are some fires that have the potential to grow and in size relatively quickly.

The majority of the fires started in the wilderness areas are by lightning, there is a small number of human caused fires, but are easily accessed due to the location of the trails.

Cause	Number of	% of total	Acres	% of Acres
1 - Lightning	86.0	51.8%	6947.0	95.9%
2 - Equipment	0	0.0%	0	0.0%
3 - Smoking	9	5.4%	252.3	3.5%
4 - Campfire	59	35.5%	44.61	0.6%
5 - Debris Burning	0	0.0%	0	0.0%
6 - Railroad	0	0.0%	0	0.0%
7 - Incendiary	1	0.6%	0.1	0.0%
8 - Children	0	0.0%	0	0.0%
9 - Miscellaneous	11	6.6%	1.31	0.0%
	166		7245.3	100.0%

	Fires	Acres	% Fires	% Acres
Total Lightning fires and Acres	86.0	6947.0	51.8%	95.9%
Total Human fires and acres	80.0	298.3	48.2%	4.1%
Total Fires and Acres	166.0	7245.3		

3.2.5.4.2 Weather

Due to the wilderness being spread across the Forest and both sides of the Cascade Crest, numerous weather factors contribute to fire growth in the FMU. For specific information regarding critical weather see the weather section for the FMU surround the particular Wilderness of concern.

Two weather patterns have the greatest effect on fire behavior or resistance to control on the forest, the thermal trough and marine push. These patterns may occur independently of one another or in succession as the thermal trough passes to the east of the Cascades a marine push may move in behind the trough. The effects of which are different on each side of the Cascades.

The thermal trough creates what are regionally referred to as east wind events. The thermal trough will build along the coast creating an area of low pressure. As a result, winds originating in Eastern Oregon will develop as east winds bringing warm dry air to the west side of the Cascades. This wind will increase in speed through saddles and gaps and accelerate downhill as well; though some areas may be sheltered from the east wind. However, all areas west of the Cascades will experience very low minimum RH with little recovery overnight. This enables wind driven spread in areas directly impinged by east winds, terrain driven spread in areas sheltered from the wind, and active burning through the night. Thermal troughs associated with high Haines days or atmospheric instability create a very high potential for large fire growth near the crest. September and October are months during the fire season this most frequently occurs.

A marine push may occur as the thermal trough moves off to the east, but a marine push may also occur independently of the thermal trough. The moderate/strong marine push brings moist air to the west side of the Cascades but also creates a west winds and instability on the east side of the Cascades. A Foehn effect may also occur as the Cascades form a barrier to moisture moving westward and causing warm dry air to rush down the east slope of the Cascades.

When a thermal trough is forecasted for the area, expect strong easterly winds, very low minimum RH, and little recovery and active fire spread through the night. This pattern may persist for several days. When a moderate or strong marine push is forecasted, the east slope of the Cascades should expect gusty westerly winds, instability with development of thunderstorms, and warm, dry, and gusty downhill winds from the crest of the Cascades. In both cases, expect the potential for wind that accelerates through the gaps and gorge.

The weather factors that most often lead to large-scale, stand replacing fire are prolonged drying under stable high-pressure systems followed by strong westerly winds. Strong westerly winds occur when intense thermal lows develop in the Columbia Basin east of the Deschutes River. Intense thermal lows develop from prolonged surface heating and high temperatures, creating strong convective air currents over a large area. The strongest winds typically occur between mid-July and early September and can exceed 40 mph at eye level. Analysis of recent and past fire patterns reveals that the largest fires in the FMU burned under strong westerly winds. The most recent example of a large fire in the wilderness areas was the Gnarl Ridge fire in 2008, it was located in the east side of the Mt. Hood Wilderness and was lightning caused and burned approximately 2,000 acres.

Precipitation ranges from 45 inches near the Cascade Crest to 18 inches at the eastern forest boundary.